TRAFFIC SIGNAL LEGEND

- PROPOSED CONTROLLER WITH CABINET
- EXISTING CONTROLLER WITH CABINET
- EXISTING MAST ARM WITH STEEL POLE
- PROPOSED POLE WITH FOUNDATION
- PROPOSED VEHICULAR HEAD
- EXISTING VEHICULAR HEAD
- PROPOSED WIRE LOOP DETECTOR
- PROPOSED PEDESTRIAN SIGNAL HEAD WITH PUSH BUTTON AND INFORMATIONAL SIGN
- EXISTING PEDESTAL POST AND FOUNDATION
- EXISTING SPAN WIRE OR MAST ARM MOUNTED SIGN
- EXISTING AERIAL COPPER INTERCONNECT CABLE
- EXISTING UNDERGROUND COPPER INTERCONNECT CABLE
- PROPOSED UNDERGROUND CONDUIT
- PROPOSED WIRELESS INTERCONNECT DEVICE
- PROPOSED JUNCTION BOX
- EXISTING JUNCTION BOX

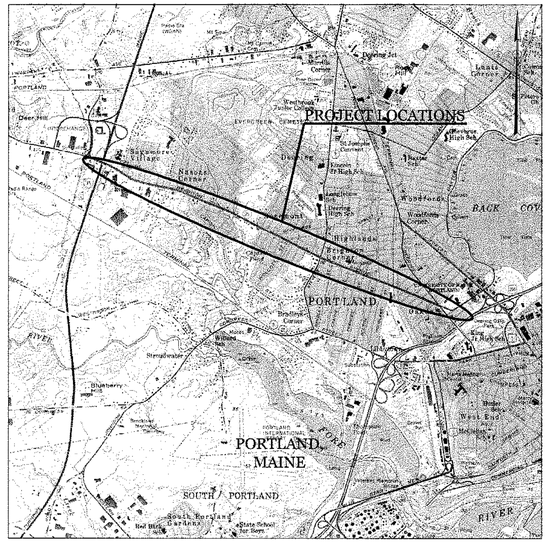
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

CUMBERLAND COUNTY

STATE PROJECT NUMBER: 17730.00

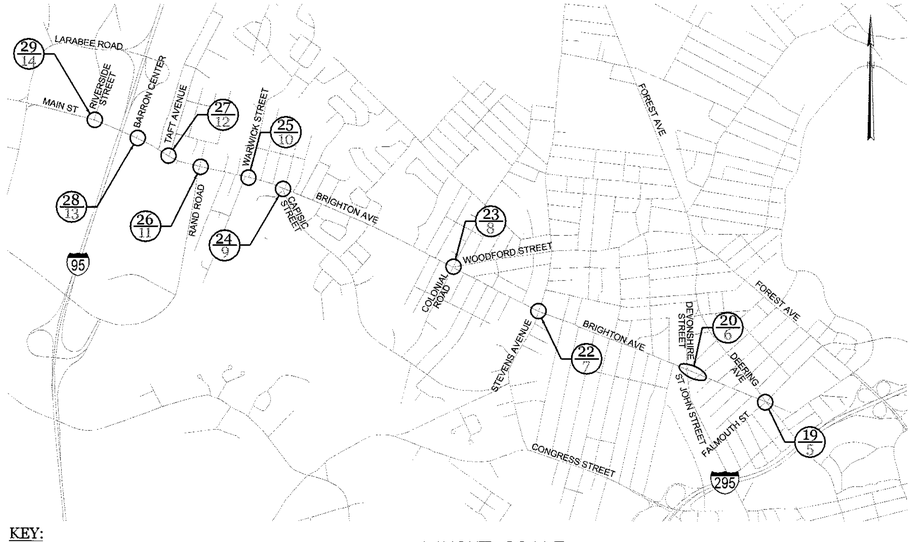
ENERGY CONSERVATION AND PACTS RTMS TIER I
IMPROVEMENTS TO TRAFFIC SIGNALS ALONG BRIGHTON AVENUE



LOCATION MAP

½ 0 ½ 1

Scale in Miles



KEY:

X = Project Intersection Number
X = Sheet Number

LAYOUT SCALE

1500 0 1500 3000

Scale in Feet

INDEX OF SHEETS

17730.00

SIGNAL DESIGN PLANS PREPARED BY:
VHB
Transportation
Land Development
Environmental Services
Six Bedford Farms, Suite 607
Bedford, New Hampshire 03110-6532
Vanasse Hangen Brustlin, Inc. 603 644 0888 ⅛ FAX 603 644 2385

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED DATE

COMMISSIONER: 11/23/10

CHIEF ENGINEER: 11/23/10

STATE OF MAINE Christopher M. Bobay 9374 LICENSED PROFESSIONAL ENGINEER

SIGNATURE 9374 P.E. NUMBER
11/16/10 DATE

PROJECT	
PROGRAM	
PROJECT MANAGER	S. LANGRY
DESIGNER	C. BOBAY
CONSULTANT	VHB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

BRIGHTON AVENUE

TITLE SHEET

SHEET NUMBER
1
OF 19

GENERAL NOTES:

1. The Contractor shall meet all utility requirements for new service connections.

2. All splices will be made in the cabinets meeting MaineDOT specifications.

3. For pole mounted signal heads, the bottom of the housing shall be mounted at least 8 feet but not more than 19 feet above the sidewalk, or if there is no sidewalk, above the pavement grade at the high point of the road

4. Two copies of as-built plans, shall be left in each of the controller cabinets.

5. The Contractor is responsible for finding exact locations of existing utilites prior to construction. The Contractor shall contact Dig-Safe and appropriate authorities prior to any subsurface activities.

6. Traffic signal work shall be completed in a manner and order that will cause the minimum disruption to traffic.

7. The Engineer and MaineDOT shall have the right and authority to determine the acceptability of work and materials in progress or completed and shall have the right to reject any work or materials which do not conform, in its sole opinion, to the plans or specifications.

8. All signing, signal and striping materials and placement shall conform to the MaineDOT standard specifications, supplemental specifications and standard details and with the Federal Highway Administration "Manual on Uniform Traffic Control Devices" (MUTCD) dated 2003, as amended.

9. Any relocations or adjustments of existing utility facilites will be made by the respective utilities in coordination with the work of the Contractor.

10. Contractor shall be responsible for obtaining any necessary street/sidewalk occupancy or opening permits.

11. All existing driveway accesses shall be maintained at all times.

12. The Contractor shall provide the Engineer, MaineDOT, and the City of Portland with a schedule of work and work zone control plans in accordance with the City Code of Ordinance Chapter 25 Article VII for constructing the traffic improvements at least two weeks prior to the commencement of work.

13. All material schedules shown on the plans are for general information only. The Contractor shall prepare his own material schedules based upon his plan review. All schedules shall be verified in the field by the Contractor prior to ordering materials or performing work.

14. All non-paved areas disturbed during construction shall be loamed and seeded, unless otherwise directed by the owner. All paved areas disturbed during construction shall be repaired by the Contractor in accordance with the City Technical Manual. Costs for repair of disturbed areas shall be incidental to other contract items.

15. Equipment

Contractor Furnished Equipment - The traffic signal controllers and various other equipment items shown on the plans shall be furnished and installed by the Contractor. Per the specifications listed in the City of Portland Technical Manual dated 4/21/10, the traffic signal controllers supplied under this contract shall be Naztec NEMA TS-2, Type 2 and shall have the capability of supporting NTCIP protocols. Traffic signal controllers shall support direct Ethernet communications from the proposed in-cabinet DSL modem to the controller's Ethernet port. Traffic signal controllers for Locations 19, 20, 28, and 29 shall support a wireless (radio) communication system. The wireless communication system shall be capable of integration with the Ethernet over copper communications system at Locations 20 and 28 and back to the central system control computer. The equipment supplied and installed shall be capable of supporting all of the system functionality currently in place between recently supplied and installed Naztec traffic signal controllers operating as on-street closed loop systems and shown as being retained for reprogramming and reuse in this project.

The system shall employ an IP-based communications network to and from the central system control computer. The equipment supplied and installed shall be capable of upload to and download from each of the system's traffic signal controller databases, remotely access local intersection reports, remotely access processed vehicle detector data, and provide real time intersection status to support graphical local and system maps.

The Contractor shall be solely responsible for providing the project with working and fully configured controllers for each intersection, delivery and complete set-up of the central system, installation of the central and local intersection communications interface, and coordination with the information technology (IT) personnel at the City of Portland or other location as directed by the City.
The Contractor is further responsible for any local wiring at the City of Portland's system computer location, system Start-up and System Loading, Acceptance Testing, Training and System Maintenance.

The Contractor shall be solely responsible for furnishing and installing all other equipment to include pedestrian signals, pedestrian pushbuttons and signs, wireless communications systems, copper interconnect and connections, field wiring, and all other equipment necessary to provide complete and operational traffic signal systems. The Contractor shall be aware of and conform to all details for the material specifications in Special Provision 718.

16. Start-Up and System Loading

The system supplier shall initiate complete system operation from the controller and system timing schedules shown on the plans or data supplied by the Engineer and shall initiate stopline detectors logging operation at the direction of the Engineer. After the supplier has initiated system operation and detector logging, the system shall be run for a continuous 7-day initial operational testing period. If any major functions of the system fail to operate during this testing period, as determined by the Engineer, the supplier shall correct or repair the system and the continuous 7-day testing period shall be restarted. At the completion of a successful 7-day testing period, the supplier shall advise the Engineer that the system is ready for the Start-up Phase. Within 7 days of completion of the initial testing period, and notification to the Design Engineer (Vanasse Hangen Brustlin, Inc.) with on-site assistance from the supplier's engineer, will begin loading the system for full coordinated operations. After coordination has been initiated and run for approximately two weeks, the Engineer shall evaluate system operation and make adjustments as necessary. The Supplier's engineer does not need to be on-site during this period, but must be available by telephone or by demand on-site as needed. Any major system malfunctions encountered during this testing period shall be corrected by the supplier, and the test restarted. During this period the Engineer may make modifications to the system timing parameters, but this will not cause restarting of the testing period. At the completion of the coordination testing period the system will be deemed ready for final Acceptance Testing as described below. Testing of controllers per section 718.07 is not required.

17. Acceptance Testing

Upon completion of the 14-day coordination testing period, the Engineer shall evaluate system operation. It is expected that the complete system shall operate fully functional at the City of Portland and the remote locations for a period of 30 consecutive days without malfunction. Minor malfunctions of inoperability not the fault of the Contractor, as judged by the Engineer, are not included in the 30-day period. If the system fails to operate as intended or the supplier's claims, the malfunction shall be corrected by the Contractor at its cost and a new 30-day testing period shall begin. This process shall continue until a completely operable system is demonstrated for a consecutive 30-day period.

Acceptance testing must demonstrate to the Engineer's reasonable satisfaction that the hardware and licensed software function in accordance with the specifications, requirements, through-puts, functionalities, performance criteria or other benefits stated in documentation, promotional materials, proposals, and/or demonstrations given to MaineDOT and the City of Portland.

18. Training

The Contractor shall provide 3-days (24 hours) of hands-on system training classes, which shall cover the general operations and maintenance of the traffic signal system. The training shall be designed for the primary local jurisdiction personnel (City of Portland) and supplemental personnel who will use and monitor the system.
The Contractor should budget for up to 8 attendees.

Training documentation shall include operating manuals for all system equipment and components.
Documentation shall also be provided, explaining the operation of all system features. Hard copies of all handouts used during training shall be distributed. The Contractor is expected to present clear and organized instruction. The initial training shall consist minimally of the following:

- System operation, system performance analysis, and revision of system operating parameters based on the analysis.
- Familiarity with construction details of central office equipment (disconnect locations, cable routing etc.).
- How to enter system related commands.
- Operation of all devices.
- Generation and editing of intersection controllers.
- Uploading/downloading of intersection controller databases.
- Procedure for enabling dynamic displays.
- Explanation of the communication system.
- Basic troubleshooting procedures to isolate malfunctions.
- The Contractor shall supply a course syllabus for each proposed training day for approval by the Engineer at least 7 business days prior to the scheduled course. Each syllabus shall include a description of the topics covered, the level of detail to be covered in the class, and the number of teaching hours included in the class. The Contractor shall also supply a list of equipment, software, and manuals to be provided for the training at least 5 business days prior to the scheduled course. All training classes shall make use of the system data collected during the Start-up Phase of the project.

19. System Maintenance

The system must come with a minimum five (5) year software maintenance agreement to become effective when the proposed system has been accepted, in writing, by MaineDOT and the City of Portland.

Software updates shall be provided free of charge for five (5) years from date of system acceptance. Software corrections or required modifications for proper system operation per these specifications shall be furnished to MaineDOT and the City of Portland at no additional cost during the warranty period.

Hardware equipment shall be warranted for three (3) years, effective when the installed and functional system has been accepted, in writing, by MaineDOT, the City of Portland.

Third party hardware and software licenses and warranties shall be passed to MaineDOT and the City of Portland.

20. The Contractor shall replace any existing local intersection wire loop detectors that are not functioning at any signalized intersection in the project prior to System Start-up and Loading. The Contractor shall also re-inspect each signalized intersection during the Acceptance Testing period and replace each non-functioning loop detector and certify that all loop detectors are functioning properly before final acceptance is granted. The Contractor shall notify and receive authorization from the Engineer before replacing any malfunctioning loop detector.

21. As payment for work on this project, the Contractor shall submit a lump sum bid per intersection and in addition a lump sum bid for wireless interconnection. Any modifications to existing copper interconnect cable (e.g. T-Taps) shall be subsidiary to ITEM 643.81. See Special Provision 643 for additional information.

22. Salvage Rights: The City of Portland shall have first rights to all equipment removed or replaced by the project (contact Kevin Thomas 207-756-8291). The Contractor shall carefully remove and store all equipment claimed by the City of Portland at a central location on site for retrieval by the City. The storage area shall be secure and all control equipment removed that has computer chip technology shall be stored in an interior heated environment.

Any equipment not claimed by the City of Portland for salvage shall be removed from the site by the Contractor and disposed of in a manner acceptable to the Engineer.

23. The Contractor shall be responsible for submitting RED-LINE AS-BUILT drawings of the final work to the Engineer. Those drawings shall be on a clean set of plans showing all changes or modifications to the Bid Plans.

24. The Contractor will be responsible for the relocation of power meters if required. This work will be incidental to item 643.71 as applicable to the location of the work.

25. The Contractor shall perform the work in a manner that will require the least amount of downtime to the traffic signal operations. Any police detail required (as deemed necessary by the Resident Engineer) will be paid for by the Contractor.

26. The Contractor shall remain alert for any evidence of contaminated soils. The Contractor shall employ appropriate health and safety measures to protect its workers against hazards associated with excavating and working near contaminated soils. If the Contractor encounters evidence of soil or groundwater contamination, the Contractor shall secure the excavation, stop work in the contaminated area, and immediately notify the Engineer. The Engineer shall contact the Hydrogeologist in MaineDOT's Environmental Office at 207-624-3100 and the Maine Department of Environmental Protection at 800-482-0777. Work may only continue with authorization from the Engineer.

27. The Contractor is directed to project Special Provision 718 for additional information related to the following:

- 718.12 Traffic signal control system
- 718.13 Wireless interconnect system
- 718.14 Pedestrian crossing system

Special provision 718 expands upon the information found in these general notes. As such, the more restrictive language between these general notes and special provision 718 shall govern the work to be performed under this project.

28. The intersection base plans shown on Sheets 5-15 were digitized by VHB based on aerial photography provided by the City of Portland. Supplemental information was obtained by VHB from field reviews and inventory conducted November 12, 2008 and April 6-9, 2009.

DAILY AND WEEKLY COORDINATION SCHEDULE

WEEK	DAY OF WEEK						
PROG	SUN	MON	TUE	WED	THU	FRI	SAT
JAN-DEC	3	1	1	1	1	1	2

EVENT	TIME HR	TIME MIN	TIME SEC	ACTION
DAY PLAN 1				
1	00	00	00	54
2	06	00	00	1
3	06	45	00	4
4	08	45	00	2
5	10	30	00	3
6	11	45	00	5
7	13	30	00	3
8	14	45	00	5
9	18	00	00	3
10	19	00	00	2
11	20	00	00	54
DAY PLAN 2				
1	00	00	00	54
2	10	00	00	3
3	11	15	00	3
4	15	30	00	3
5	18	00	00	2
6	19	00	00	54
DAY PLAN 3				
1	00	00	00	54
2	10	00	00	2
3	11	15	00	3
4	15	30	00	2
5	18	30	00	54

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

		BY	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	5/6/10
CHECKED-REVIEWED	C. BUSAT	M. SUENNEN	7/19/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE

GENERAL NOTES

SHEET NUMBER

2

OF 19

Username: J ROBERT Date:11/16/2010

Filename: ...\planset\002_5208500NOTES.dgn Division:

SECTION 0001 PROJECT ITEMS - BASIS OF AWARD

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
626.22	NON-METALLIC CONDUIT	LF	75
626.31	450 MM [18 IN] FOUNDATION	EA	2
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT DEERING AVE AND FALMOUTH ST	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT ST JOHN AND DARTMOUTH ST	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT STEVENS AVE	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHT0N AVE AT WOODFORD AND COLUMBIA RD	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT KENT ST AND CAPISIC ST	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT ROWE AVE AND WARWICK ST	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT RAND RD AND CABOT ST	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT TAFT AVE	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT BARRON CENTER	LUMP	1
643.71	TRAFFIC SIGNAL MODIFICATION: BRIGHTON AVE AT RIVERSIDE ST	LUMP	1
643.81	TRAFFIC SIGNAL CONTROL SYSTEM	LUMP	1
643.92	PEDESTAL POLE	EA	2
652.33	DRUM	EA	15
652.34	CONES	EA	50
652.35	CONSTRUCTION SIGNS	SF	200
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	LUMP	1
652.38	FLAGGERS	HR	96
652.381	UNIFORM TRAFFIC CONTROL OFFICERS	HR	72
659.10	MOBILIZATION	LUMP	1

SECTION 0001 NOTES:

1. SEE LIST OF MAJOR EQUIPMENT ON SIGNAL PLAN SHEETS FOR ITEMIZATION OF WORK ITEMS 643.71.
2. THE TRAFFIC SIGNAL CONTROL SYSTEM (ITEM 643.81) INCLUDES A FREE UPGRADE OF STREETWISE LIGHT TO STREETWISE ATMS UNDER THE PACTS REGIONAL AGREEMENT, SYSTEM SETUP, AND TRAINING (SEE SPECIAL PROVISION 718.12 AND GENERAL NOTE 19).
3. ANY MODIFICATIONS TO THE EXISTING COPPER INTERCONNECT CABLE SHALL BE SUBSIDIARY TO ITEM 643.81.

SECTION 0002 PROJECT ITEMS - BID ALTERNATE NO. 1

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
643.90	INTERCONNECT: WIRELESS (BRIGHTON AVE - DARTMOUTH ST TO DEERING/FALMOUTH)	LUMP	1

SECTION 0003 PROJECT ITEMS - BID ALTERNATE NO. 2

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
643.90	INTERCONNECT: WIRELESS (BRIGHTON AVE - BARRON CENTER TO RIVERSIDE ST)	LUMP	1

SECTION 0002 AND 0003 NOTES:

1. SEE LIST OF MAJOR EQUIPMENT ON SIGNAL PLAN SHEETS 18 AND 19 FOR ITEMIZATION OF WORK ITEMS.
2. PROPOSED DSL MODEM CONNECTED TO THE PROPOSED WIRELESS INTERCONNECT SHALL BE SUBSIDIARY TO ITEM 643.90.
3. ANY ADDITIONAL EQUIPMENT OR WORK THAT IS NOT SHOWN ON THE PLANS BUT FOUND TO BE NECESSARY TO PROVIDE A COMPLETE AND FULLY OPERATIONAL WIRELESS COMMUNICATIONS SYSTEM INTEGRATED TO THE EXISTING COPPER COMMUNICATIONS SYSTEM SHALL BE SUBSIDIARY TO ITEM 643.90. THIS INCLUDES MOBILIZATION, TRAFFIC CONTROL PLAN, FLAGGERS, AND UNIFORM OFFICERS.

SECTION 0004 PROJECT ITEMS - BID ALTERNATE NO. 3

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
643.86	TRAFFIC SIGNAL LOOP DETECTOR	EA	4

SECTION 0004 NOTES:

1. IF APPROVED, THIS ALTERNATE PROVIDES WIRE LOOPS AT UNDETERMINED LOCATIONS AS NEEDED (SEE GENERAL NOTE 21).
2. ANY ADDITIONAL EQUIPMENT OR WORK THAT IS NOT SHOWN ON THE PLANS BUT FOUND TO BE NECESSARY TO PROVIDE A COMPLETE AND FULLY OPERATIONAL VEHICLE DETECTION SYSTEM SHALL BE SUBSIDIARY TO ITEM 643.86.
3. MOBILIZATION, TRAFFIC CONTROL PLAN, FLAGGERS, UNIFORM OFFICERS, AND ALL MAINTENANCE OF TRAFFIC CONTROL DEVICE ITEMS TO COMPLETE THE LOOP INSTALLATIONS SHALL BE SUBSIDIARY TO 643.86.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PORTLAND
PIN
17730.00

		BY	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	5/6/10
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	7/19/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

BRIGHTON AVENUE

QUANTITIES

Filename: ...\ts\planset\003_520850QUAN.dgn Division: Username: J ROBERT Date:11/16/2010

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	5/6/10
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	7/19/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE

OVERALL MAP

SHEET NUMBER

4

OF 19

Username: J ROBERT Date:11/16/2010

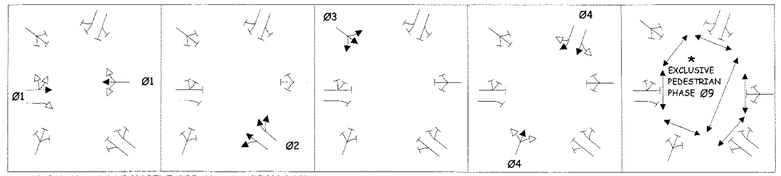
Filename: ...\ts\planset\004_52085000MAP.dgn Division:

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	14
APS ADVISOR ACCESSIBLE PEDESTRIAN SIGNAL (PUSHBUTTON) WITH INFORMATIONAL SIGN	8
FURNISH AND INSTALL GPS UNIT WIRED TO TRAFFIC CONTROLLER TO UPDATE TIME CLOCK ON A DAILY BASIS	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

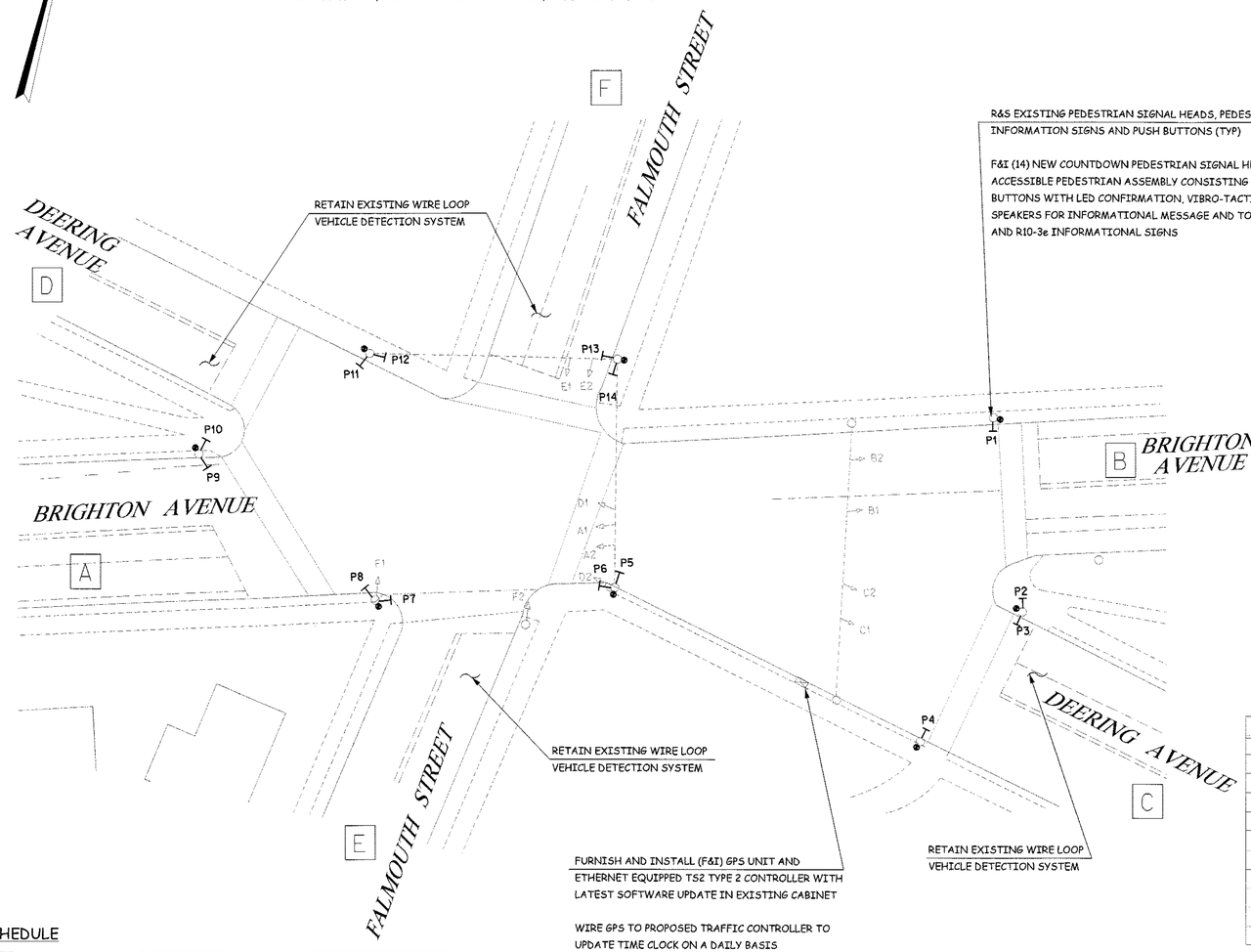
EXISTING PHASING SEQUENCE (RETAINED)



* = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING	PROPOSED
A1,A2,B1,B2,C1,C2 D1,D2,E1,E2,F1,F2	P1 - P14
	
12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



R&S EXISTING PEDESTRIAN SIGNAL HEADS, PEDESTRIAN INFORMATION SIGNS AND PUSH BUTTONS (TYP)

F&I (14) NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND ACCESSIBLE PEDESTRIAN ASSEMBLY CONSISTING OF BUTTONS WITH LED CONFIRMATION, VIBRO-TACTICLE ARROW, SPEAKERS FOR INFORMATIONAL MESSAGE AND TONE LOCATOR, AND R10-3e INFORMATIONAL SIGNS

FURNISH AND INSTALL (F&I) GPS UNIT AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING CABINET

WIRE GPS TO PROPOSED TRAFFIC CONTROLLER TO UPDATE TIME CLOCK ON A DAILY BASIS

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	7	7	7	7					
PASSAGE TIME	3	3	3	2					
MAXIMUM 1	45	35	18	20					
MAXIMUM 2	70	30	20	20					
YELLOW	3	3	3	3					3
ALL RED	4	4	4	3					1
PEDESTRIAN WALK									10
PEDESTRIAN CLEARANCE									14
RECALL	S	O	O	O					O
DETECTOR OPERATION		PR	PR	PR					
PREEMPTION PRIORITY									
FLASH	R	R	R	R					D
DUAL ENTRY	OFF	OFF	OFF	OFF					OFF

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø1 GRN)	63	36	82	78	97
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	23	15	21	26	33
SPLIT TIME Ø2	22	17	20	21	21
SPLIT TIME Ø3	17	15	15	20	20
SPLIT TIME Ø4	17	14	15	14	17
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	45	32	41	47	54
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	34	29	30	34	37
SPLIT TIME Ø9	1	29	29	29	29

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE TIME OF THE COORDINATED PHASE (Ø1 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 6 AND PHASE 8 ARE DUMMY PHASES TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

STREET	DETECTOR DIRECTION	DETECTOR LANE	Ø	AMPLIFIER TYPE	AMPLIFIER SLOT NO.	AMPLIFIER DETECTOR NO.	AMPLIFIER CHANNEL	INDUCTANCE		CONTINUITY		RESISTANCE LOOP TO GROUND	
DEERING AVE	NORTHWESTBOUND	ALL DEPARTURE	2										
DEERING AVE	SOUTHEASTBOUND	ALL DEPARTURE	3										
FALMOUTH ST	NORTHBOUND	ALL DEPARTURE	4										
FALMOUTH ST	SOUTHBOUND	ALL DEPARTURE	4										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:

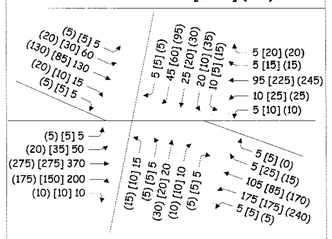
1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION ALONG BRIGHTON AVENUE.

INTERSECTION:
DEERING AVE / FALMOUTH ST

SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
19

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	M. GRAHAM	5/6/10
CHECKED-REVIEWED	C. BOBAY	7/19/10
DESIGN2-DETAILED2	J. ROBERT	
DESIGN3-DETAILED3	M. SUENNEN	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE
DEERING AVENUE / FALMOUTH STREET
TRAFFIC SIGNAL PLAN

SHEET NUMBER
5
OF 19

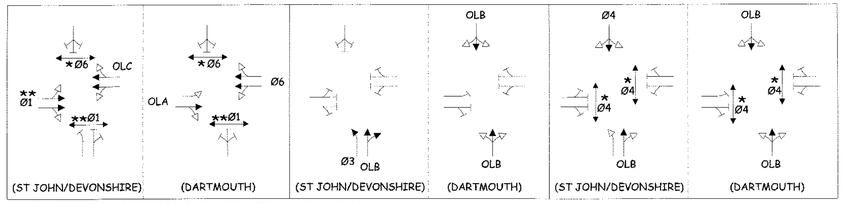
Filename: ...\ts\planset\005_520850OSC01.dgn Division: Username: J ROBERT Date:11/16/2010

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	16
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	16
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING PHASING SEQUENCE (RETAINED)

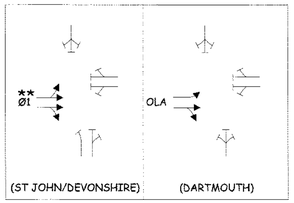


(ST JOHN/DEVONSHIRE) (DARTMOUTH) (ST JOHN/DEVONSHIRE) (DARTMOUTH) (ST JOHN/DEVONSHIRE) (DARTMOUTH)

* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

** IF FEASIBLE, CONTRACTOR IS ENCOURAGE TO MOVE EXISTING Ø1 LOAD SWITCH AND FIELD TERMINALS TO Ø2 AND REPROGRAM CONTROLLER ACCORDINGLY

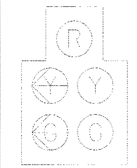
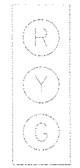
RAILROAD PREEMPTION PROGRAM (RETAINED)



(ST JOHN/DEVONSHIRE) (DARTMOUTH)

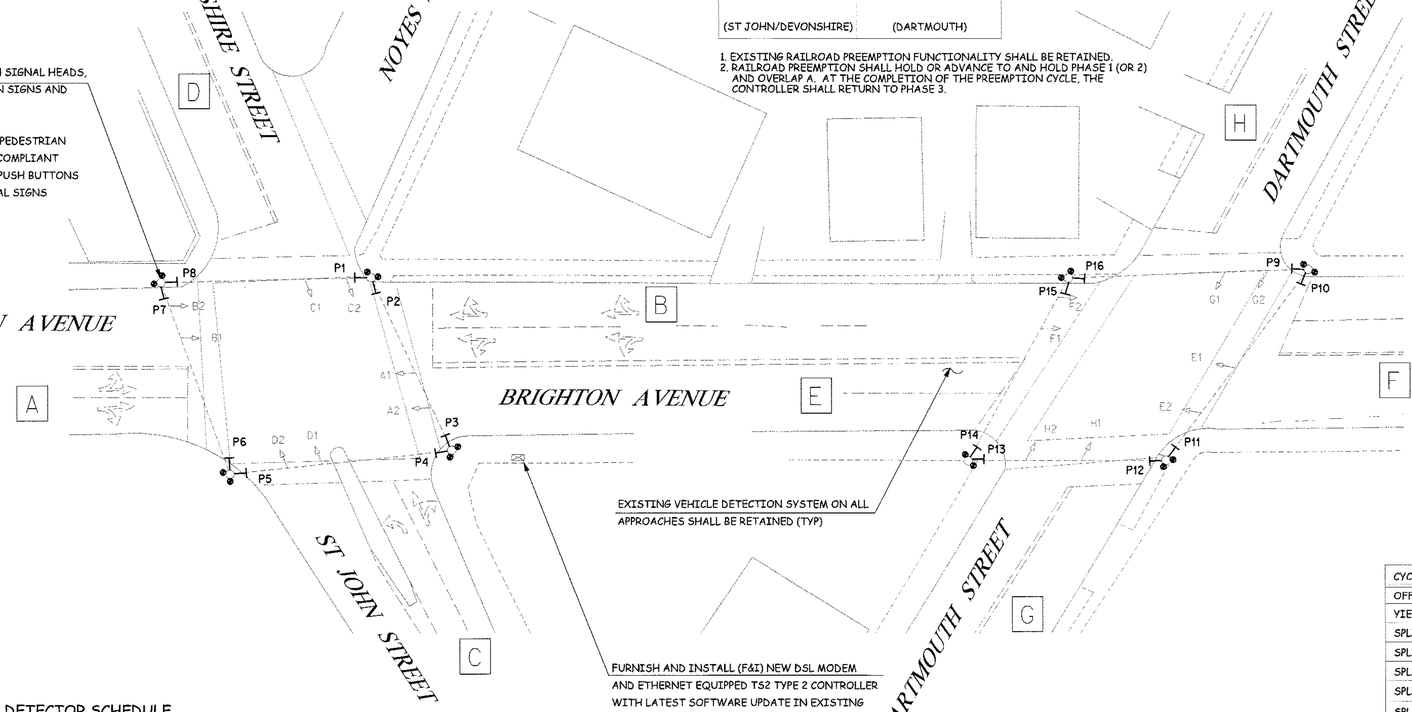
1. EXISTING RAILROAD PREEMPTION FUNCTIONALITY SHALL BE RETAINED.
2. RAILROAD PREEMPTION SHALL HOLD OR ADVANCE TO AND HOLD PHASE 1 (OR 2) AND OVERLAP A. AT THE COMPLETION OF THE PREEMPTION CYCLE, THE CONTROLLER SHALL RETURN TO PHASE 3.

SIGNAL HEAD DATA

EXISTING		PROPOSED
C1	A1,A2,B1,B2,C2, D1,D2,E1,E2,F1, F2,G1,G2,H1,H2	P1-P16
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

R&S EXISTING PEDESTRIAN SIGNAL HEADS, PEDESTRIAN INFORMATION SIGNS AND PUSHBUTTONS (TYP)

F&I (16) NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS WITH ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS AND R10-3e INFORMATIONAL SIGNS



EXISTING VEHICLE DETECTION SYSTEM ON ALL APPROACHES SHALL BE RETAINED (TYP)

FURNISH AND INSTALL (F&I) NEW DSL MODEM AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING CABINET

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	10	**	7	7		10			
PASSAGE TIME	3	**	3	3		3			
MAXIMUM 1	45	**	10	18		45			
MAXIMUM 2	70	**	25	25		70			
YELLOW	3.5	**	3.5	3.5		3.5			
ALL RED	2.5	**	2.5	2.5		2.5			
PEDESTRIAN WALK	10	**		7		10			
PEDESTRIAN CLEARANCE	14	**		16		14			
RECALL	S	**	O	O		S			
DETECTOR OPERATION	PR	**	PR	PR		PR			
PREEMPTION PRIORITY									
FLASH	Y	**	R	R		Y			
DUAL ENTRY	OFF	**	OFF	OFF		OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION

Y = YELLOW
R = RED
D = DARK
** - SEE NOTE IN EXISTING PHASING SEQUENCE

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø1 GRN)	37	9	48	51	45
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	36	45	51	58	62
SPLIT TIME Ø2	**	**	**	**	**
SPLIT TIME Ø3	14	15	19	21	28
SPLIT TIME Ø4	30	30	30	31	30
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	36	45	51	58	62
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	44	45	49	52	58

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø1 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

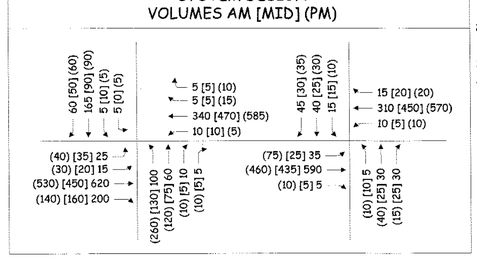
DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL					LOOP TO GROUND	
BRIGHTON AVE	EASTBOUND	ALL DEPARTURE	1										
BRIGHTON AVE	WESTBOUND	ALL DEPARTURE	6										
ST JOHN ST	NORTHBOUND	LEFT	3										
DEVONSHIRE ST	SOUTHBOUND	ALL DEPARTURE	4										
DARTMOUTH ST	NORTHBOUND	ALL DEPARTURE	4										
DARTMOUTH ST	SOUTHBOUND	ALL DEPARTURE	4										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

INTERSECTION:
DEVONSHIRE / ST JOHN / DARTMOUTH STREETS
SIGNAL GROUP:
1
LOCATION / PROPOSED DROP:
20

NOTE: PROPOSED DROP 21 IS RESERVED FOR ST JOHN / DEVONSHIRE STREET WHEN THE SINGLE CONTROLLER OPERATING WITH DARTMOUTH STREET IS SPLIT (FUTURE) INTO INDEPENDENT CONTROL.

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	SIGNATURE	P.E. NUMBER	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM		
CHECKED-REVIEWED	C. BODAT		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			

	BY	DATE
REVISIONS 1	J. ROBERT	5/6/10
REVISIONS 2	M. SUENKEN	7/19/10
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRIGHTON AVENUE
DEVONSHIRE, ST. JOHN AND DARTMOUTH ST
TRAFFIC SIGNAL PLAN

SHEET NUMBER
6
OF 19

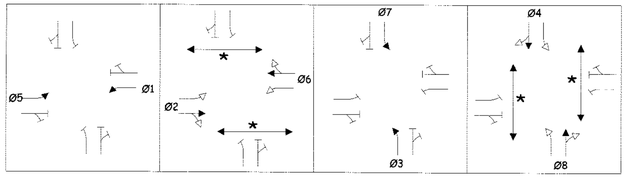
Username: J ROBERT Date:11/16/2010
Filename: ...\ts\planset\006_5208500SG02.dgn Division:

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GTI LED OR APPROVED EQUAL	8
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	8
IMPLEMENT LOCAL AND SYSTEM TIMING	-

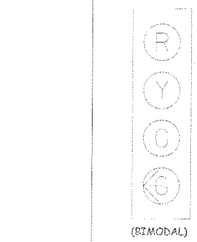
THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

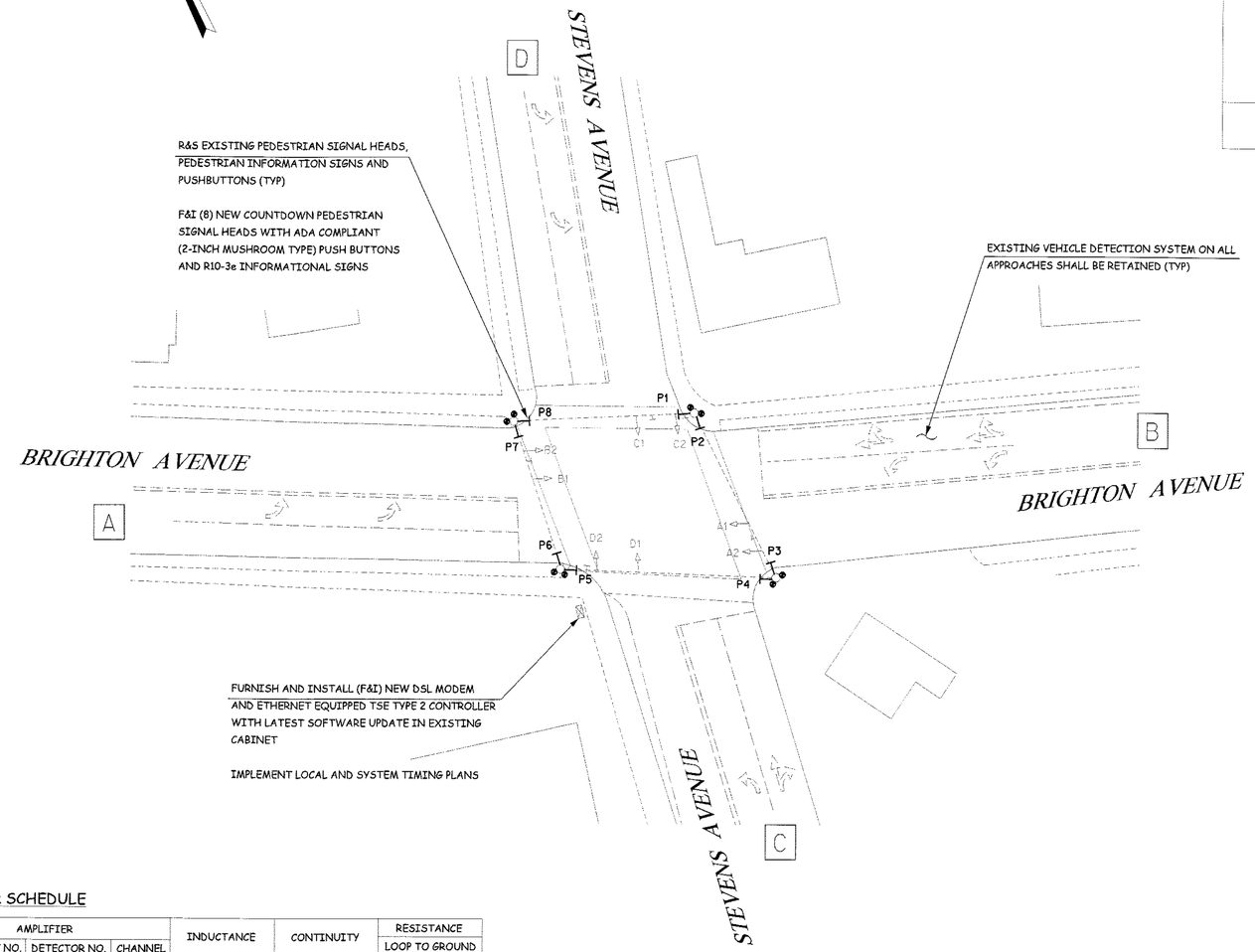
EXISTING PHASING SEQUENCE (RETAINED)



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING		PROPOSED
A1,B1,C1,D1	A2,B2,C2,D2	P1-P8
 (BIMODAL)		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	7	10	5	7	5	10	7	7	
PASSAGE TIME	1.5	3	1.5	2.5	1.5	3	1.5	2.5	
MAXIMUM 1	20	45	15	30	15	45	20	30	
MAXIMUM 2	15	60	15	30	15	60	15	30	
YELLOW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
ALL RED	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
PEDESTRIAN WALK		6		6		6		6	
PEDESTRIAN CLEARANCE		12		12		12		12	
RECALL	O	S	O	O	O	S	O	O	
DETECTOR OPERATION	PR	PR	PR	PR	PR	PR	PR	PR	
PREEMPTION PRIORITY									
FLASH	R	Y	R	R	R	Y	R	R	
DUAL ENTRY	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	80	90	100	110	120	
OFFSET (END Ø2 GRN)	28	76	13	89	101	
YIELD POINT	0	0	0	0	0	
SPLIT TIME Ø1	14	14	14	14	13	
SPLIT TIME Ø2	27	35	42	51	56	
SPLIT TIME Ø3	14	14	13	13	13	
SPLIT TIME Ø4	25	27	31	32	38	
SPLIT TIME Ø5	14	14	14	14	14	
SPLIT TIME Ø6	27	35	42	51	55	
SPLIT TIME Ø7	14	14	13	13	13	
SPLIT TIME Ø8	25	27	31	32	38	

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL					LOOP TO GROUND	
BRIGHTON AVE	WESTBOUND	LEFT	1										
BRIGHTON AVE	EASTBOUND	THROUGH-RIGHT	2										
STEVENS AVE	NORTHBOUND	LEFT	3										
STEVENS AVE	SOUTHBOUND	THROUGH-RIGHT	4										
BRIGHTON AVE	EASTBOUND	LEFT	5										
BRIGHTON AVE	WESTBOUND	THROUGH-RIGHT	6										
STEVENS AVE	SOUTHBOUND	LEFT	7										
STEVENS AVE	NORTHBOUND	THROUGH-RIGHT	8										
								RECORD FIELD MEASUREMENTS HERE					

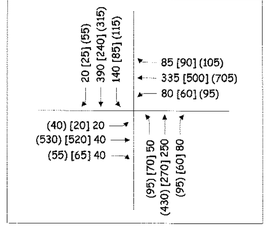
DETECTOR NOTES:
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

INTERSECTION:
STEVENS AVENUE

SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
22

SYSTEM DESIGN VOLUMES AM [MID] (PM)



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

		SIGNATURE	P.E. NUMBER	DATE
PROJ. MANAGER	S. LANDRY			
DESIGN DETAILED	M. GRAHAM			
CHECKED/REVIEWED	C. BUBAR			
DESIGN2-DETAILED2				
DESIGN3-DETAILED3				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

BY	DATE
J. ROBERT	5/6/10
M. SUENNEN	7/19/10

BRIGHTON AVENUE
STEVENS AVENUE

TRAFFIC SIGNAL PLAN

PLAN

25 0 25 50

SCALE

SHEET NUMBER
7
OF 19

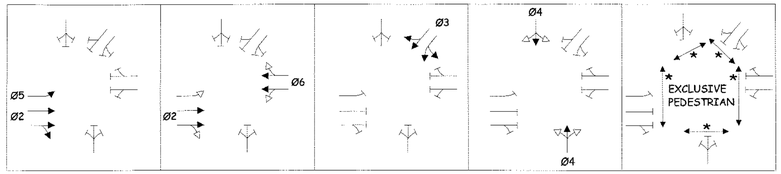
Username: J ROBERT Date:11/16/2010
Filename: ...\ts\planset\007_5208500SG03.dgn Division:

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	10
APS ADVISOR ACCESSIBLE PEDESTRIAN SIGNAL (PUSHBUTTON) WITH INFORMATIONAL SIGN	5
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED** PHASING SEQUENCE

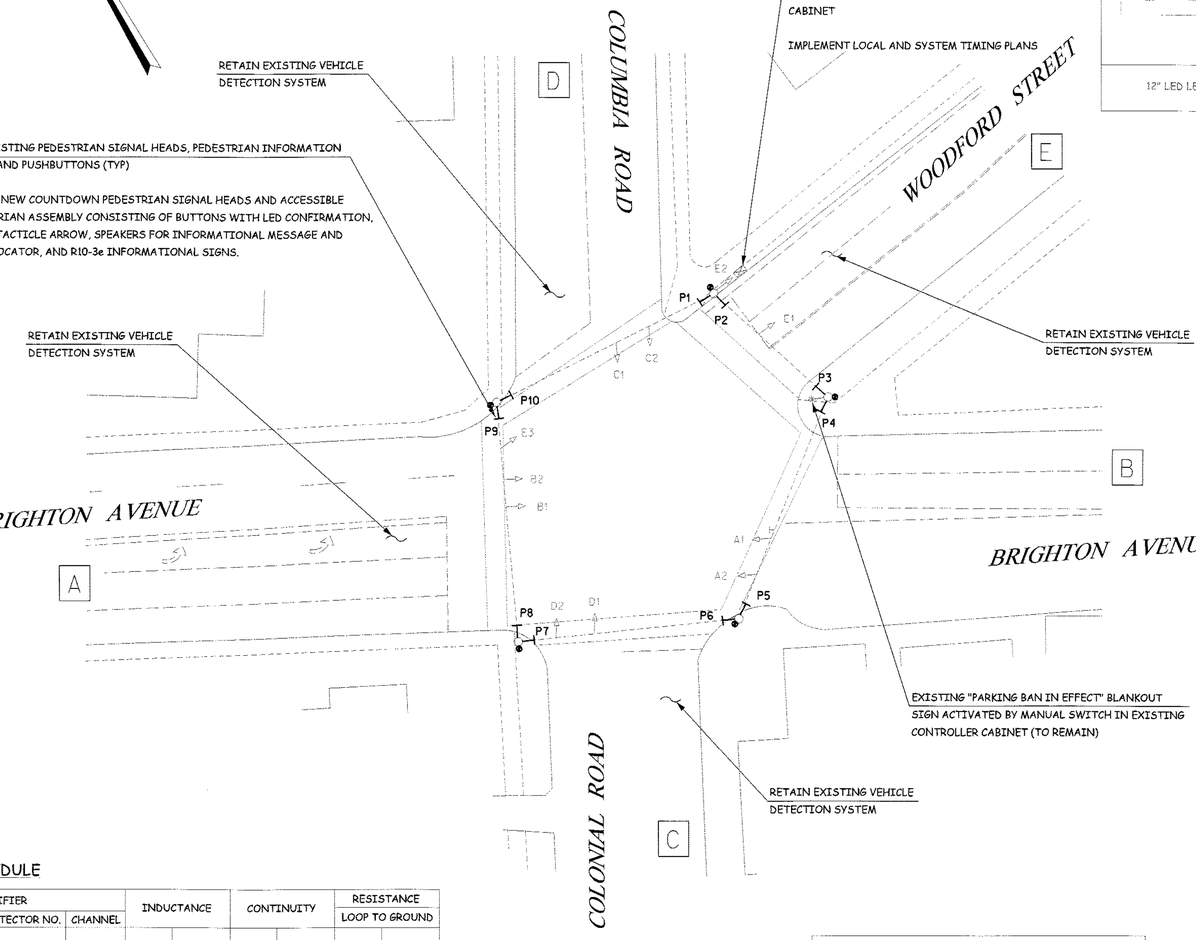


★ NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

★★ CONTRACTOR SHALL MOVE Ø1 LOAD SWITCH TO Ø5 AND SWAP Ø1, Ø2, AND Ø6 FIELD TERMINALS TO Ø5, Ø6, AND Ø2 RESPECTIVELY FOR MAINLINE CORRIDOR CONSISTENCY

SIGNAL HEAD DATA

EXISTING			PROPOSED
A1	A2,B1,B2,C1,C2,E1,E3	D1,D2,E2	P1-P10
12" LED LENS	12" LED LENS	12" LED LENS/ 8" LED LENS (2)	16" x 18" LED PEDESTRIAN SIGNAL



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		18	7	7	5	10			
PASSAGE TIME		3	2	2	1.5	3			
MAXIMUM 1		45	25	18	15	45			
MAXIMUM 2		60	30	20	25	60			
YELLOW		3	3	3.5	3.5	3			3
ALL RED		3	3	2.5	2.5	3			1
PEDESTRIAN WALK									6
PEDESTRIAN CLEARANCE									18
RECALL		S	O	O	O	S			O
DETECTOR OPERATION			PR	PR	PR				
PREEMPTION PRIORITY									
FLASH		Y	R	R	R	Y			D
DUAL ENTRY		OFF	OFF	OFF	OFF	OFF			OFF

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø2 GRN)	72	13	41	15	19
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	0	0	0	0	0
SPLIT TIME Ø2	33	27	43	43	50
SPLIT TIME Ø3	26	18	13	22	21
SPLIT TIME Ø4	20	16	15	16	20
SPLIT TIME Ø5	13	11	16	22	18
SPLIT TIME Ø6	20	16	27	21	32
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	46	34	28	38	41
SPLIT TIME Ø9	1	29	29	29	29

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

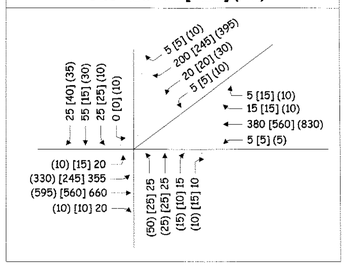
DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL					LOOP TO GROUND	
WOODFORD ST	SOUTHWESTBOUND	ALL DEPATURE	3										
COLUMBIA RD	SOUTHBOUND	ALL DEPATURE	4										
COLONIAL RD	NORTHBOUND	ALL DEPATURE	4										
BRIGHTON AVE	EASTBOUND	LEFT	5										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:

1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION FOR THE BRIGHTON AVENUE THROUGH MOVEMENTS.

INTERSECTION:
WOODFORD / COLUMBIA / COLONIAL RD.
SIGNAL GROUP:
1
LOCATION / PROPOSED DROP:
23

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

SIGNATURE

P.E. NUMBER

DATE

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN: DET'AILED	M. GRAHAM	J. ROBERT 5/6/10
CHECKED: REVIEWED	C. BOBAY	M. SIEMINEN 7/19/10
DESIGN: DET'AILED2		
DESIGN: DET'AILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRIGHTON AVENUE
WOODFORD / COLUMBIA / COLONIAL RD.

TRAFFIC SIGNAL PLAN

SHEET NUMBER
8
OF 19

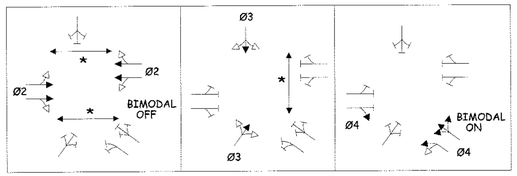
Username: J ROBERT Date:11/16/2010
Filename: ...\ts\planset\008_52085005604.dgn Division:

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	6
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	6
IMPLEMENT LOCAL AND SYSTEM TIMING	-

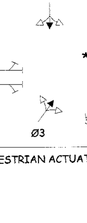
THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

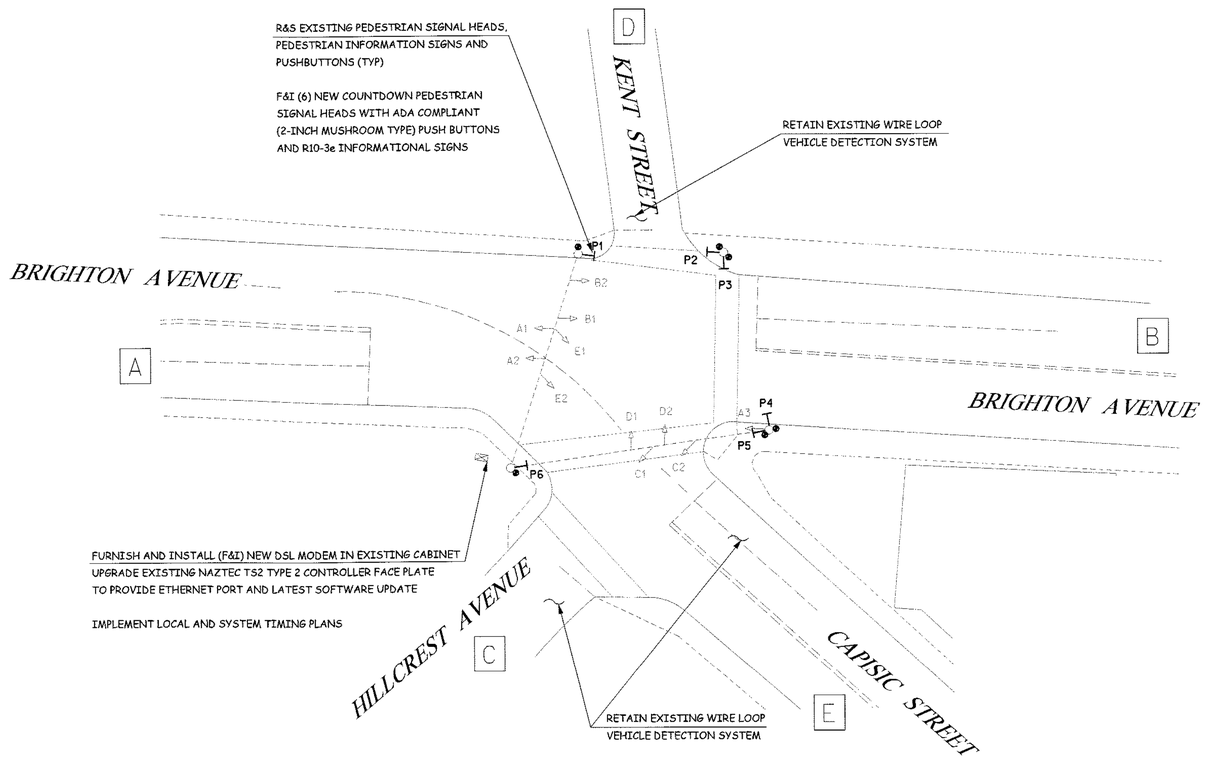
EXISTING PHASING SEQUENCE (RETAINED)



★ NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING		PROPOSED
A3	A1,A2,B1,B2,C1, C2,D1,D2,E1,E2	P1-P6
 (BIMODAL)		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		18	5	7		18			
PASSAGE TIME		3	2	2		3			
MAXIMUM 1		45	10	18		45			
MAXIMUM 2		75	10	35		75			
YELLOW		3.5	3.5	3.5		3.5			
ALL RED		3.5	3.5	2.5		3.5			
PEDESTRIAN WALK		6	6			6			
PEDESTRIAN CLEARANCE		13	13			13			
RECALL		S	O	O		S			
DETECTOR OPERATION			PR	PR					
PREEMPTION PRIORITY									
FLASH		Y	R	R		Y			
DUAL ENTRY		OFF	OFF	OFF		OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	80	90	100	110	120	COORDINATION MODE SET TO FIXED FORCE-OFF
OFFSET (END Ø2 GRN)	4	5	22	86	89	
YIELD POINT	0	0	0	0	0	
SPLIT TIME Ø1	0	0	0	0	0	
SPLIT TIME Ø2	31	37	49	61	56	
SPLIT TIME Ø3	27	27	26	26	27	
SPLIT TIME Ø4	22	26	25	23	37	
SPLIT TIME Ø5	0	0	0	0	0	
SPLIT TIME Ø6	31	37	49	61	56	
SPLIT TIME Ø7	0	0	0	0	0	
SPLIT TIME Ø8	49	53	51	49	64	

COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 6 AND PHASE 8 ARE DUMMY PHASES TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

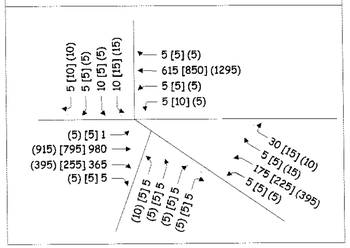
DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE LOOP TO GROUND	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL						
KENT ST	SOUTHBOUND	ALL DEPARTURE	3										
HILLCREST AVE	NORTHEASTBOUND	ALL DEPARTURE	3										
CAPISIC ST	NORTH WESTBOUND	ALL DEPARTURE	4										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:
1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION ALONG BRIGHTON AVENUE.

INTERSECTION:
CAPISIC / HILLCREST / KENT STREET
SIGNAL GROUP:
1
LOCATION / PROPOSED DROP:
24

EXISTING STREETWISE LIGHT REFERENCE NO. 1060

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

		SIGNATURE
		P.E. NUMBER
		DATE

	BY	DATE
S. LANDRY		
PROJ. MANAGER		
DESIGN-DETAILED	J. ROBERT	5/6/10
CHECKED-REVIEWED	M. SUENNEN	7/19/10
DESIGN2-DETAILED2	M. GRAHAM	
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRIGHTON AVENUE
CAPISIC / HILLCREST / KENT STREET
TRAFFIC SIGNAL PLAN

SHEET NUMBER
9
OF 19

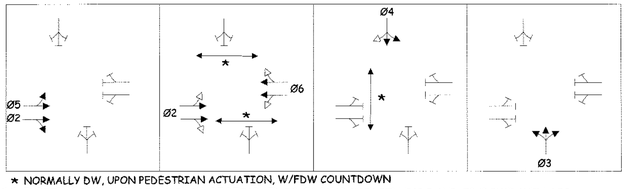
Filename: ...\ts\planset\009_5208500SG05.dgn Division: Username: J. ROBERT Date:11/16/2010

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 1 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	6
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	6
IMPLEMENT LOCAL AND SYSTEM TIMING	-

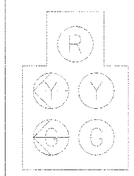
THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

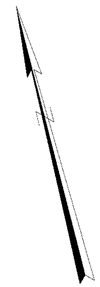
PROPOSED** PHASING SEQUENCE (RETAINED)

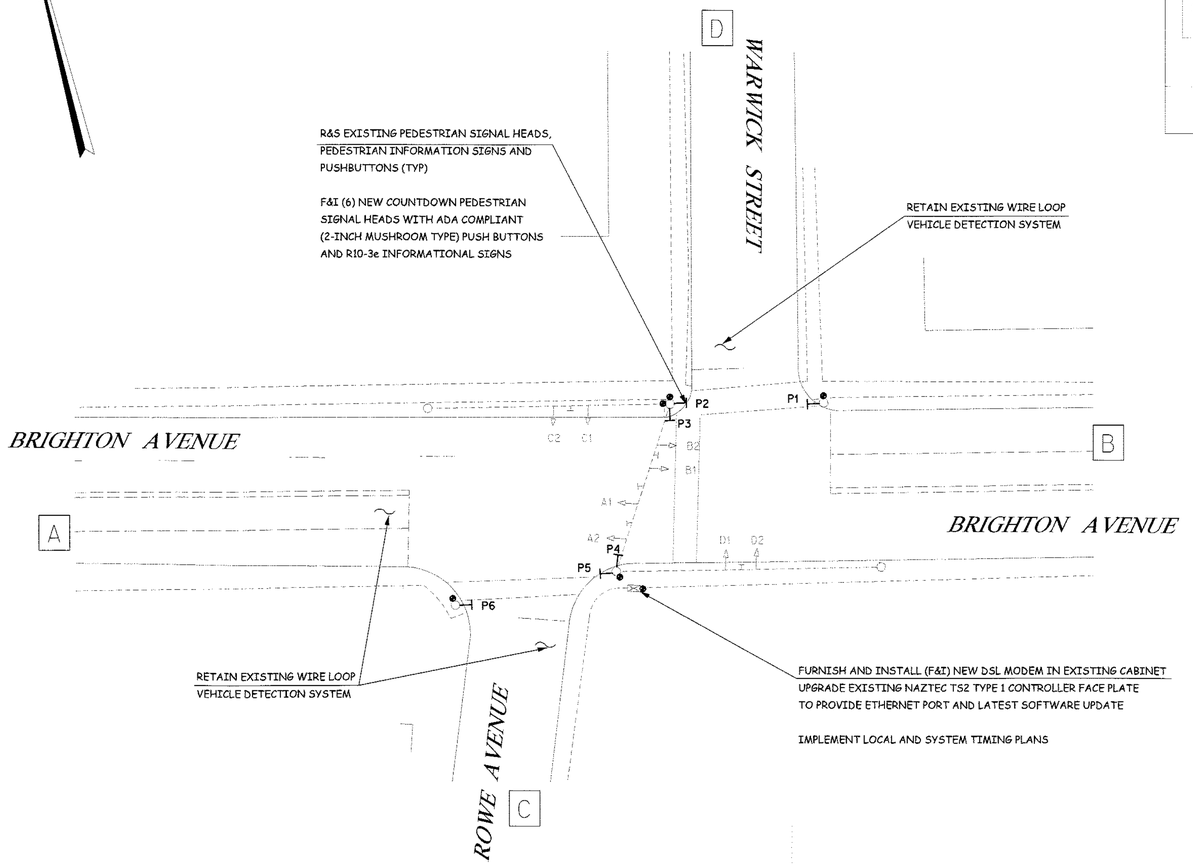


* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
** EXISTING SIGNAL PHASING SHALL BE RETAINED SO Ø4 (WARWICK ST) LEADS AND Ø3 (ROWE AVE) LAGS. HOWEVER, Ø5 SHALL BE REPROGRAMMED TO LEADING TO ELIMINATE EXISTING "YELLOW TRAP."

SIGNAL HEAD DATA

EXISTING		PROPOSED
A1	A2,B1,B2,C1,C2,D1,D2	P1-P6
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL





SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		18	5	7	7	18			
PASSAGE TIME		3	1.5	2.5	3	3			
MAXIMUM 1		45	10	25	10	45			
MAXIMUM 2		75	15	20	10	75			
YELLOW		3.5	3.5	3.5	3.5	3.5			
ALL RED		3.5	2.5	2.5	3.5	3.5			
PEDESTRIAN WALK		6		6		6			
PEDESTRIAN CLEARANCE		10		12		10			
RECALL		S	O	O	O	S			
DETECTOR OPERATION			PR	PR	PR				
PREEMPTION PRIORITY									
FLASH		Y	R	R	R	Y			
DUAL ENTRY		OFF	OFF	OFF	OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

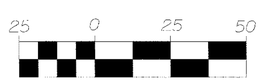
ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø2 GRN)	4	11	19	46	27
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	0	0	0	0	0
SPLIT TIME Ø2	40	48	63	70	83
SPLIT TIME Ø3	15	16	13	16	13
SPLIT TIME Ø4	25	26	24	24	24
SPLIT TIME Ø5	14	14	14	14	16
SPLIT TIME Ø6	26	34	49	56	67
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	40	42	37	40	37

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

PLAN



SCALE

DETECTOR SCHEDULE

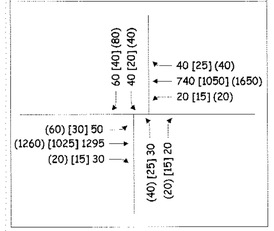
DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
												LOOP TO GROUND	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL						
ROWE AVE	NORTHBOUND	ALL DEPARTURE	3										
WARWICK ST	SOUTHBOUND	ALL DEPARTURE	4										
BRIGHTON AVE	EASTBOUND	LEFT	5										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:
1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION FOR THE BRIGHTON AVENUE THROUGH MOVEMENTS.

INTERSECTION:
ROWE AVENUE / WARWICK STREET
SIGNAL GROUP:
1
LOCATION / PROPOSED DROP:
25

EXISTING STREETWISE LIGHT REFERENCE NO. 1130

SYSTEM DESIGN VOLUMES AM [MID] (PM)



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN 17730.00

	SIGNATURE	P.E. NUMBER	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM		
CHECKED-REVIEWED	C. BUBAR		
DESIGN2-DETAILED2	M. SUENNEN		
DESIGN3-DETAILED3			

	BY	DATE
REVISIONS 1	J. ROBERT	5/6/10
REVISIONS 2		7/19/10
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRIGHTON AVENUE
ROWE AVENUE / WARWICK STREET
TRAFFIC SIGNAL PLAN

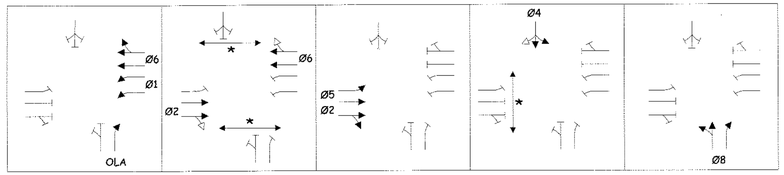
SHEET NUMBER
10
OF 19

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 1 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	8
R10-3e SIGN	5
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED** PHASING SEQUENCE

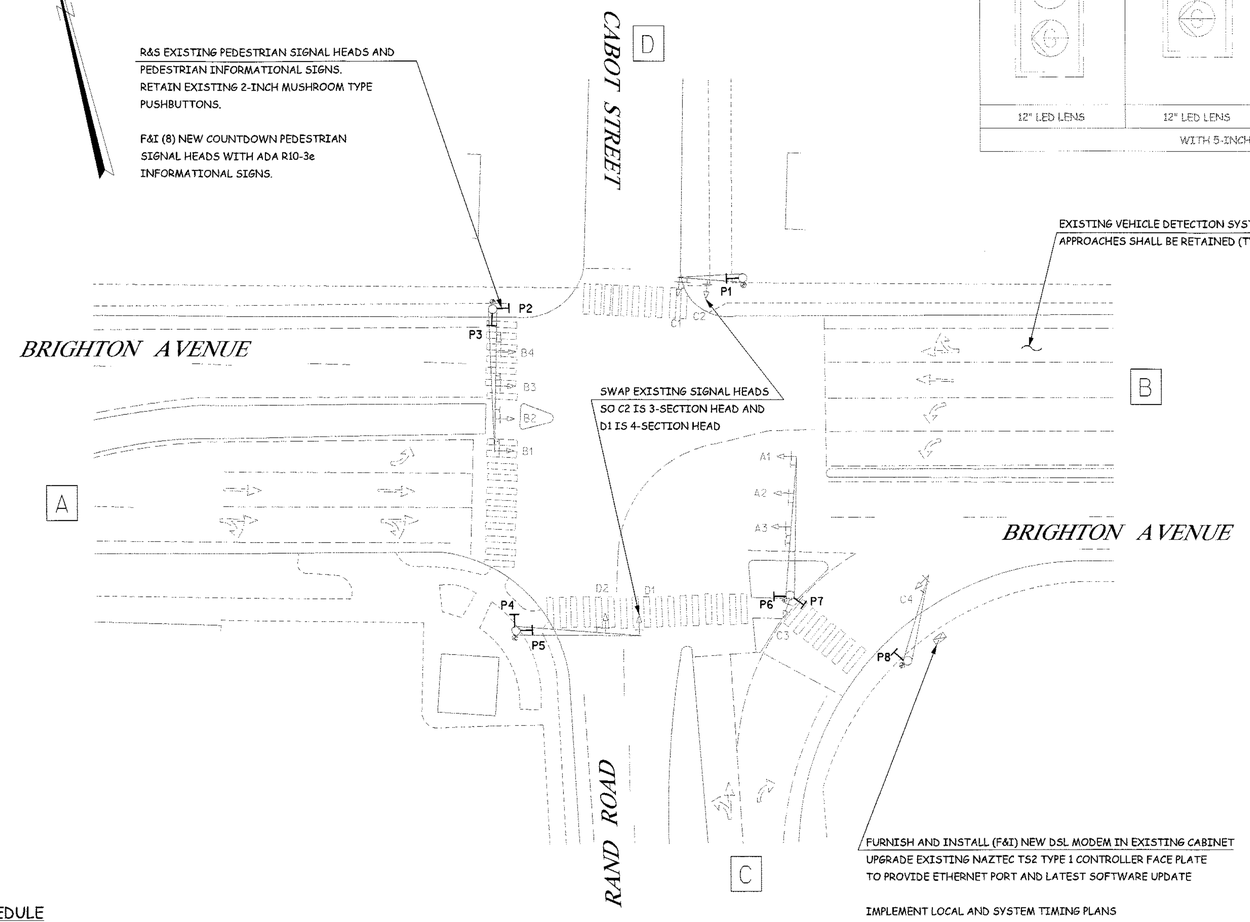


* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

** EXISTING SIGNAL PHASING SHALL BE MODIFIED SO Ø1 LEFT-TURNS LEAD AND Ø5 LEFT-TURNS LAG

SIGNAL HEAD DATA

EXISTING				PROPOSED
C1,D1	A1,B1,B2	A2,A3,B3,B4,C2,D2	C3,C4	P1-P8
				
12" LED LENS	12" LED LENS	12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL
WITH 5-INCH LOUVERED BACKPLATES				



R&S EXISTING PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN INFORMATIONAL SIGNS.
RETAIN EXISTING 2-INCH MUSHROOM TYPE PUSHBUTTONS.

F&I (8) NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS WITH ADA R10-3e INFORMATIONAL SIGNS.

EXISTING VEHICLE DETECTION SYSTEM ON ALL APPROACHES SHALL BE RETAINED (TYP)

SWAP EXISTING SIGNAL HEADS SO C2 IS 3-SECTION HEAD AND D1 IS 4-SECTION HEAD

FURNISH AND INSTALL (F&I) NEW DSL MODEM IN EXISTING CABINET

UPGRADE EXISTING NAZTEC TS2 TYPE 1 CONTROLLER FACE PLATE TO PROVIDE ETHERNET PORT AND LATEST SOFTWARE UPDATE

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	7	10		5	5	10		7	
PASSAGE TIME	2	2		1.5	1.5	2		1.5	
MAXIMUM 1	25	45		10	10	45		20	
MAXIMUM 2	25	60		10	10	60		25	
YELLOW	3.5	3.5		3.5	3.5	3.5		3.5	
ALL RED	2.5	2.5		2.5	2.5	2.5		2.5	
PEDESTRIAN WALK		6		6		10			
PEDESTRIAN CLEARANCE		17		26		13			
RECALL	O	S		O	O	S		O	
DETECTOR OPERATION	PR	PR		PR	PR	PR		PR	
PREEMPTION PRIORITY									
FLASH	R	Y		R	R	Y		R	
DUAL ENTRY	OFF	OFF		OFF	OFF	OFF		OFF	

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	80	90	100	110	120	
OFFSET (END Ø6 GRN)	34	38	52	19	23	COORDINATION MODE SET TO FLOATING FORCE-OFF
YIELD POINT	0	0	0	0	0	
SPLIT TIME Ø1	13	17	17	20	22	
SPLIT TIME Ø2	16	21	29	36	44	
SPLIT TIME Ø3	13	13	16	16	16	
SPLIT TIME Ø4	38	39	38	38	38	
SPLIT TIME Ø5	13	16	13	14	12	
SPLIT TIME Ø6	16	22	33	42	54	
SPLIT TIME Ø7	38	39	38	38	38	
SPLIT TIME Ø8	13	13	16	16	16	

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø6 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 3 AND PHASE 7 ARE DUMMY PHASES TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

PLAN

SCALE

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
												LOOP TO GROUND	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL						
BRIGHTON AVE	WESTBOUND	LEFT - 1	1										
BRIGHTON AVE	WESTBOUND	LEFT - 2	1										
BRIGHTON AVE	EASTBOUND	THROUGH	2										
BRIGHTON AVE	EASTBOUND	THROUGH-RIGHT	2										
CABOT ST	SOUTHBOUND	ALL DEPARTURE	4										
BRIGHTON AVE	EASTBOUND	LEFT	5										
BRIGHTON AVE	WESTBOUND	THROUGH	6										
BRIGHTON AVE	WESTBOUND	THROUGH-RIGHT	6										
RAND ROAD	NORTHBOUND	LEFT-THROUGH	8										
RAND ROAD	NORTHBOUND	RIGHT	8										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

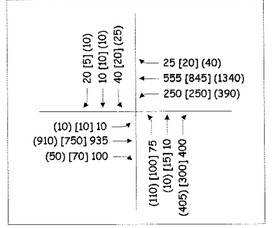
INTERSECTION:
CABOT STREET/ RAND ROAD

SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
26

EXISTING STREETWISE LIGHT REFERENCE NO. 1080

SYSTEM DESIGN VOLUMES AM [MID] (PM)



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	M. GRAHAM	5/6/10
CHECKED-REVIEWED	C. BOGAY	7/19/10
DESIGN2-DETAILED2	M. SUENNEN	
DESIGN3-DETAILED3	J. ROBERT	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE
CABOT STREET / RAND ROAD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
11
OF 19

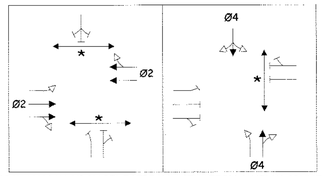
Filename: ...\ts\plotset\011_5208500SG07.dgn Division: Username: J ROBERT Date:11/16/2010

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACE PLATE	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	6
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	7
FURNISH AND INSTALL 8-FOOT PEDESTAL POST (ITEM 643.92)	1
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	1
FURNISH AND INSTALL 3-INCH SIGNAL CONDUIT (ITEM 626.22)	55 LF
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

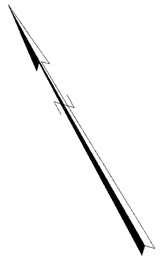
EXISTING PHASING SEQUENCE (RETAINED)

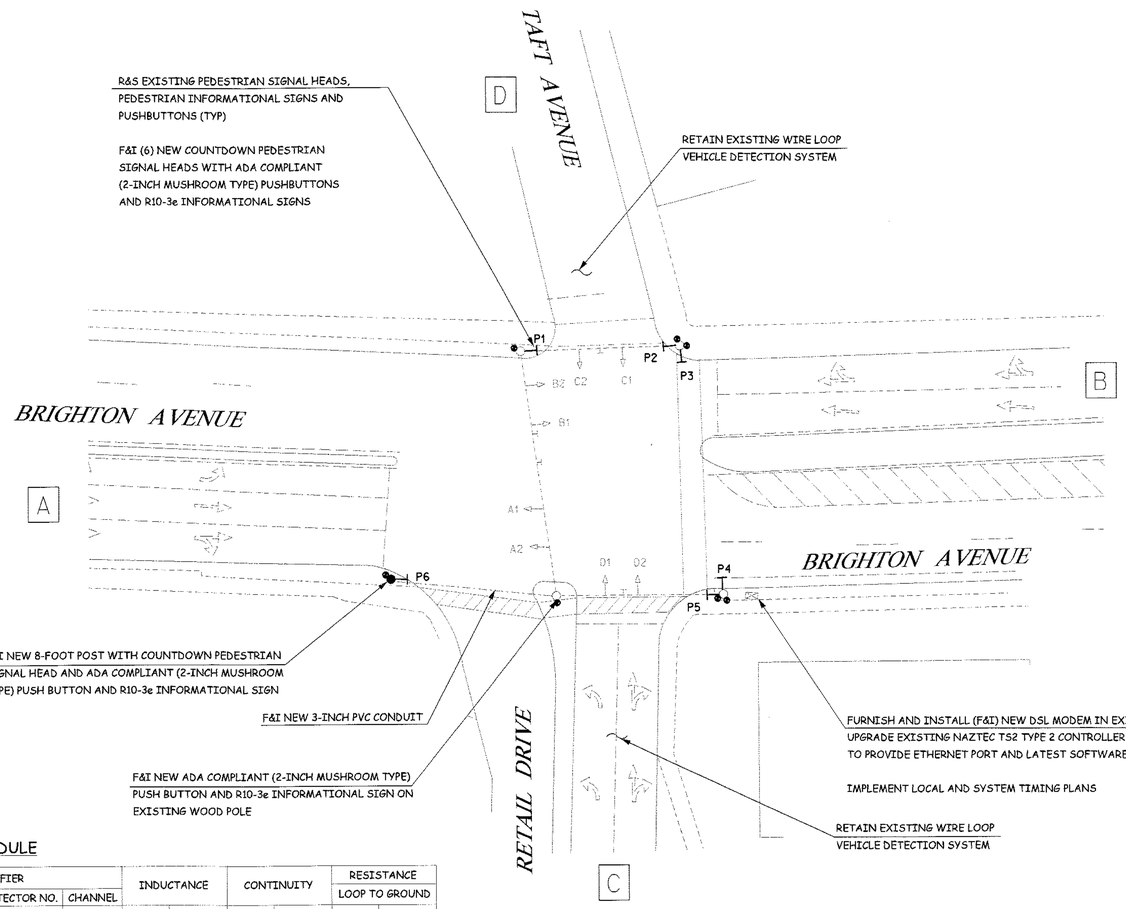


* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING		PROPOSED
A1,A2,B2,C1,C2,D1,D2	B1	P1-P6
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL





SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		10		5		10		5	
PASSAGE TIME		3		2		3		2	
MAXIMUM 1		45		25		45		25	
MAXIMUM 2		70		30		70		30	
YELLOW		3.5		3.5		3.5		3.5	
ALL RED		2.5		2.5		2.5		2.5	
PEDESTRIAN WALK		7		7		18			
PEDESTRIAN CLEARANCE		21		19		10			
RECALL		S		O		S		O	
DETECTOR OPERATION				PR				PR	
PREEMPTION PRIORITY									
FLASH		Y		R		Y		R	
DUAL ENTRY		OFF		ON		OFF		ON	

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	80	90	100	110	120	
OFFSET (END Ø2 GRN)	50	55	70	41	49	
YIELD POINT	0	0	0	0	0	
SPLIT TIME Ø1	0	0	0	0	0	
SPLIT TIME Ø2	45	49	54	72	80	
SPLIT TIME Ø3	0	0	0	0	0	
SPLIT TIME Ø4	35	41	46	38	40	
SPLIT TIME Ø5	0	0	0	0	0	
SPLIT TIME Ø6	45	49	54	72	80	
SPLIT TIME Ø7	0	0	0	0	0	
SPLIT TIME Ø8	35	41	46	38	40	

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE LOOP TO GROUND	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL						
TAFT AVE	SOUTHBOUND	ALL DEPARTURE	4										
RETAIL DR	NORTHBOUND	ALL DEPARTURE	4										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:
1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION ALONG BRIGHTON AVENUE.

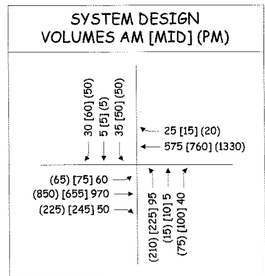
INTERSECTION:
TAFT AVENUE / RETAIL DRIVE

SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
27

EXISTING STREETWISE LIGHT REFERENCE NO. 1120

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN
25 0 25 50
SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	SIGNATURE	P.E. NUMBER	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM		
CHECKED-REVIEWED	C. BOBAT		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	J. ROBERT		5/6/10
REVISIONS 2	M. SOENKEN		7/19/10
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BRIGHTON AVENUE
TAFT AVENUE / RETAIL DRIVE

TRAFFIC SIGNAL PLAN

SHEET NUMBER
12
OF 19

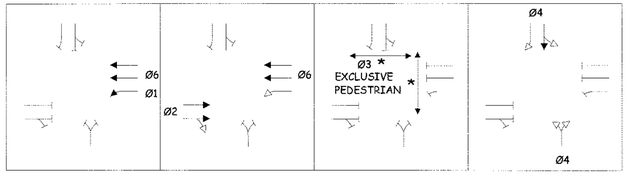
Filename: ...\ts\planset\012_5208500SG08.dgn Division: Username: J ROBERT Date:11/16/2010

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML684 DSL MODEM	1
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	4
APS ADVISOR ACCESSIBLE PEDESTRIAN SIGNAL (PUSHBUTTON) WITH INFORMATIONAL SIGN	4
IMPLEMENT LOCAL AND SYSTEM TIMING	-
FURNISH AND INSTALL 8-FOOT PEDESTAL POST (ITEM 643.92)	1
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	1
FURNISH AND INSTALL 3-INCH PVC SIGNAL CONDUIT (ITEM 626.22)	15 LF

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

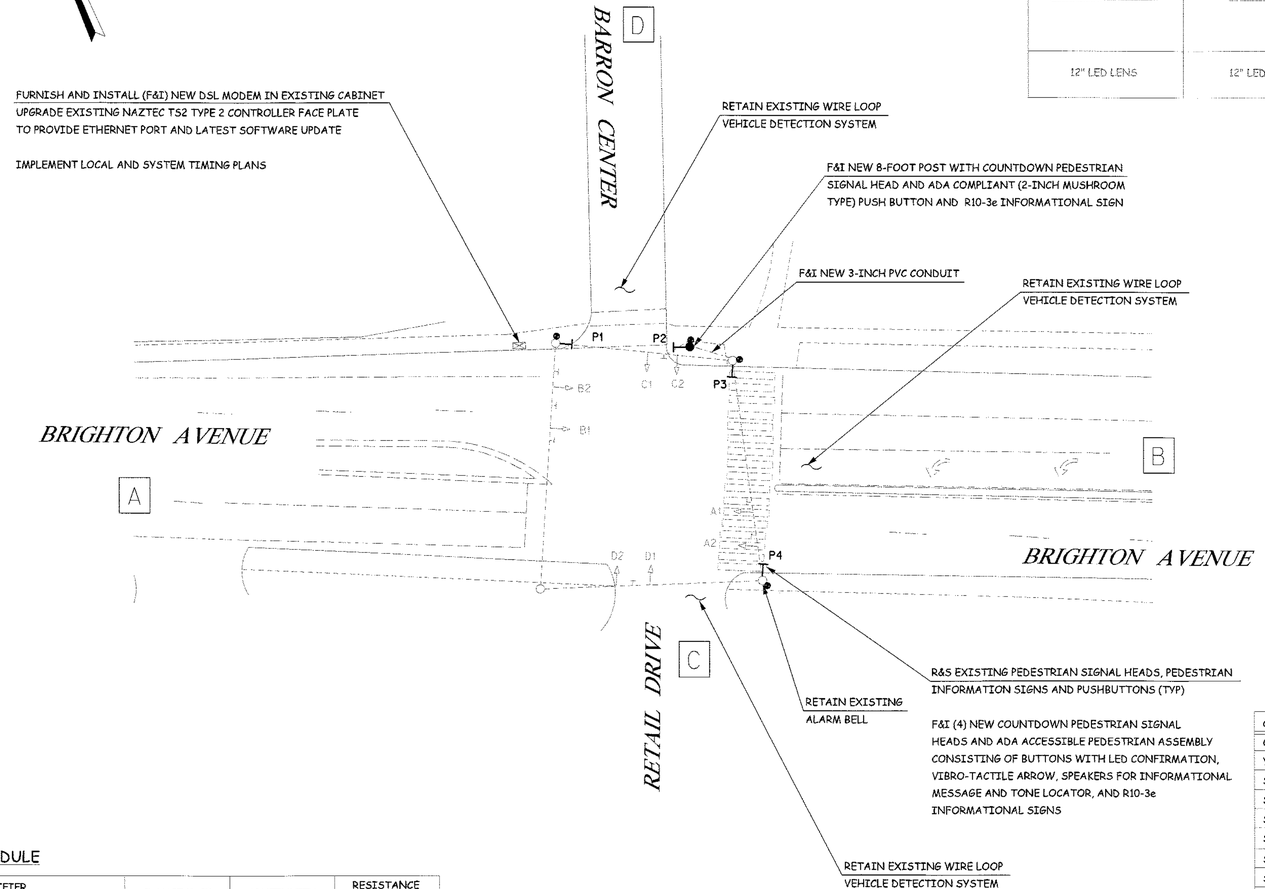
EXISTING PHASING SEQUENCE (RETAINED)



* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING			PROPOSED
B1	A2,C1,C2,D1,D2	A1,B2	P1-P4
12" LED LENS	12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5	5		10			
PASSAGE TIME	2	3	1	2		3			
MAXIMUM 1	10	45	30	20		45			
MAXIMUM 2	10	70	30	20		70			
YELLOW	3.5	3.5	3	3.5		3.5			
ALL RED	2.5	2.5	1	2.5		2.5			
PEDESTRIAN WALK			10						
PEDESTRIAN CLEARANCE			20						
RECALL	O	S	O	O		S			
DETECTOR OPERATION	PR		PR	PR					
PREEMPTION PRIORITY									
FLASH	R	Y	D	R		Y			
DUAL ENTRY	OFF	OFF	OFF	OFF		OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø6 GRN)	30	32	43	10	24
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	13	13	13	13	13
SPLIT TIME Ø2	17	25	39	49	59
SPLIT TIME Ø3	35	35	35	35	35
SPLIT TIME Ø4	15	17	13	13	13
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	30	38	52	62	72
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	50	52	48	48	48

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø6 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE	CONTINUITY	RESISTANCE
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL			LOOP TO GROUND
BRIGHTON AVE	WESTBOUND	LEFT	1							
BARRON CENTER	SOUTHBOUND	ALL DEPARTURE	4							
RETAIL DR	NORTHBOUND	ALL DEPARTURE	4							
								RECORD FIELD MEASUREMENTS HERE		

DETECTOR NOTES:

1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION FOR THE BRIGHTON AVENUE THROUGH MOVEMENTS.

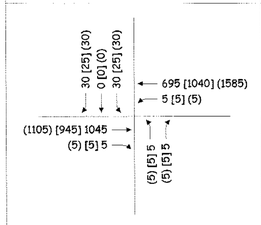
INTERSECTION:
BARRON CENTER

SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
28

EXISTING STREETWISE LIGHT REFERENCE NO. 1050

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	SIGNATURE	P.E. NUMBER	DATE
PROJ. MANAGER			
DESIGN-DETAILED	S. LANDRY		
CHECKED-REVIEWED	M. GRAHAM		
DESIGN2-DETAILED2	C. BIBEAU		
DESIGN3-DETAILED3			

	BY	DATE
REVISIONS 1	J. ROBERT	5/6/10
REVISIONS 2	M. SUENAERT	7/19/10
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BRIGHTON AVENUE
BARRON CENTER

TRAFFIC SIGNAL PLAN

SHEET NUMBER
13
OF 19

Filename: ...\ts\planset\013_5208500SG09.dgn Division: Username: J ROBERT Date:11/16/2010

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	4
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	4
FURNISH AND INSTALL GPS UNIT WIRED TO TRAFFIC CONTROLLER TO UPDATE TIME CLOCK ON A DAILY BASIS	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	7	5	5	10			
PASSAGE TIME	1.5	2.5	2.5	1.5	2.5	2.5			
MAXIMUM 1	12	45	30	15	15	45			
MAXIMUM 2	15	60	30	15	15	60			
YELLOW	3.5	3.5	3.5	3.5	3.5	3.5			
ALL RED	2.5	2.5	2.5	2.5	2.5	2.5			
PEDESTRIAN WALK		5		5		5			
PEDESTRIAN CLEARANCE		15		16		15			
RECALL	O	S	O	O	O	S			
DETECTOR OPERATION	PR	PR	PR	PR	PR	PR			
PREEMPTION PRIORITY									
FLASH	R	Y	R	R	R	Y			
DUAL ENTRY	OFF	OFF	OFF	OFF	OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

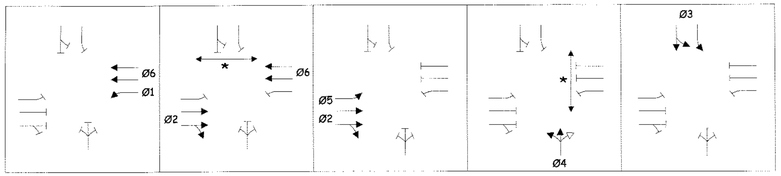
	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø6 GRN)	71	80	91	60	70
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	13	13	13	13	16
SPLIT TIME Ø2	27	28	38	38	45
SPLIT TIME Ø3	13	21	21	31	31
SPLIT TIME Ø4	27	28	28	28	28
SPLIT TIME Ø5	14	18	21	21	18
SPLIT TIME Ø6	26	23	30	30	43
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	40	49	49	59	59

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø6 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

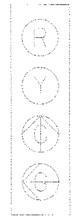
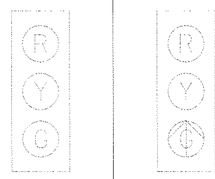
PROPOSED** PHASING SEQUENCE

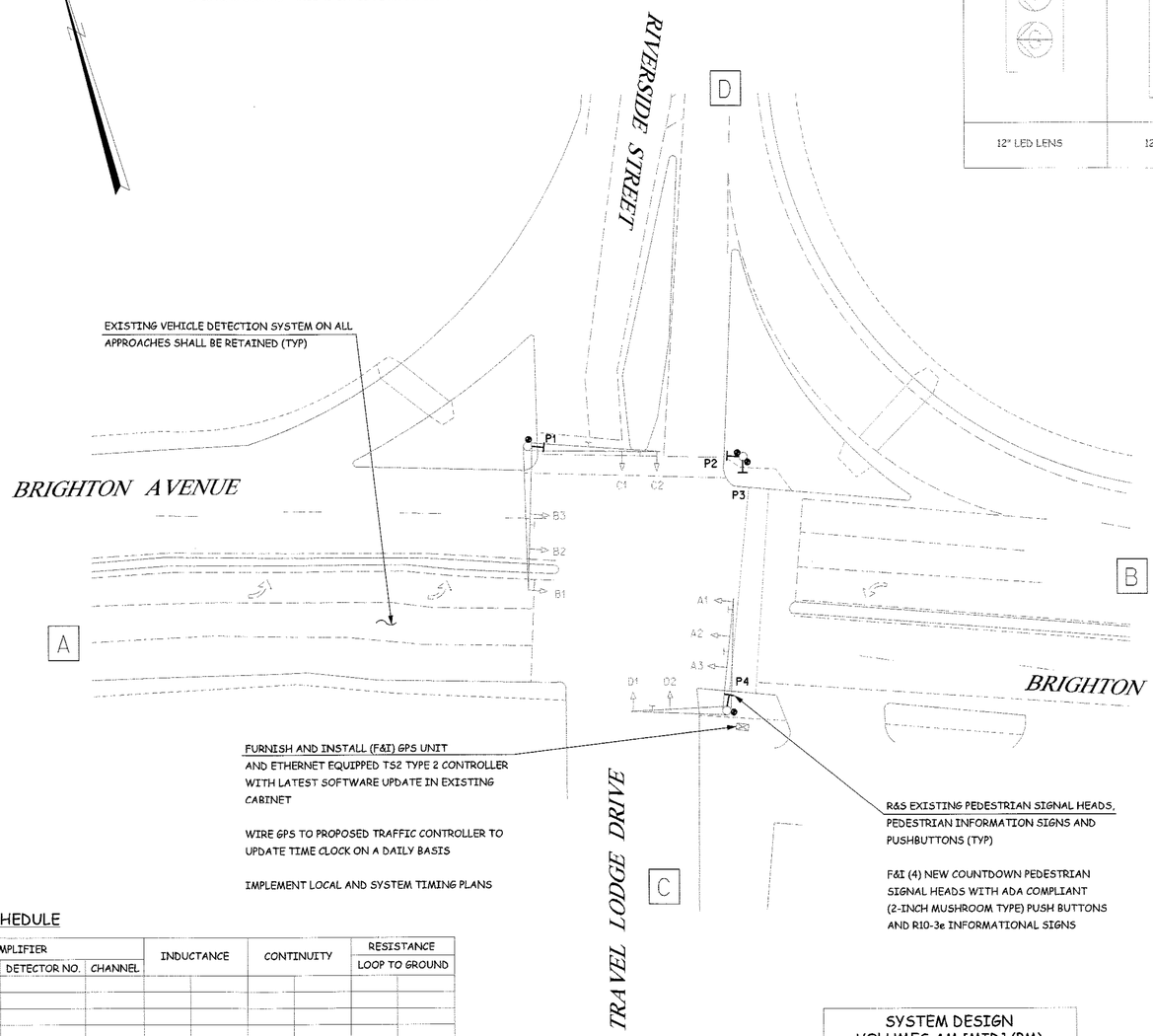


* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

** EXISTING SIGNAL PHASING SHALL BE MODIFIED SO Ø1 LEFT-TURN AND Ø4 LEADS AND Ø5 LEFT-TURN AND Ø3 RIVERSIDE STREET LAGS

SIGNAL HEAD DATA

EXISTING				PROPOSED
A1,B1,D2	D1	A3,C1,C2	A2,B2,B3	P1-P4
				
12" LED LENS	12" LED LENS	12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
												LOOP TO GROUND	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL						
BRIGHTON AVE	WESTBOUND	LEFT	1										
BRIGHTON AVE	EASTBOUND	THRU/THRU-RIGHT	2										
RIVERSIDE ST	SOUTHBOUND	LEFT/LEFT-THRU	3										
DRIVEWAY	NORTHBOUND	ALL DEPARTURE	4										
BRIGHTON AVE	EASTBOUND	LEFT	5										
BRIGHTON AVE	WESTBOUND	THROUGHS	6										
								RECORD FIELD MEASUREMENTS HERE					

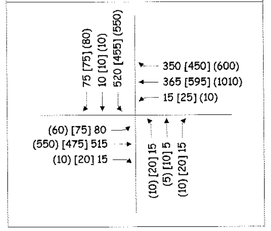
DETECTOR NOTES:
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

INTERSECTION:
RIVERSIDE STREET

SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
29

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN
25 0 25 50
SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	BY	DATE
S. LANDRY		
PROJ. MANAGER		
DESIGN-DETAILED	J. ROBERT	5/6/10
CHECKED-REVIEWED	M. SUENNEN	7/19/10
DESIGN2-DETAILED2	M. GRAHAM	
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE
RIVERSIDE STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
14
OF 19

Username: J ROBERT Date:11/16/2010
Filename: ...\ts\planset\014_5208500SG10.dgn Division:

INSTALL WIRELESS INTERCONNECT SYSTEM TO EXISTING COPPER COMMUNICATIONS NETWORK (BID ALTERNATE NO. 2)

INSTALL GPS UNIT

CONNECT 1 PAIR OF EXISTING 12 TWP #19 AWG COMMUNICATIONS CABLE TO PROPOSED ACTELIS ML 688 DSL MODEMS. MODIFY T-TAPS AS NEEDED TO ESTABLISH STABLE ETHERNET OVER COPPER COMMUNICATIONS BETWEEN FIELD SIGNAL CONTROLLERS AND STREETWISE ATMS SERVER LOCATED AT PORTLAND TRAFFIC ENGINNEERING

EXISTING 12 TWP #19 AWG AERIAL COMMUNICATIONS CABLE TO BE RETAINED

EXISTING 12 TWP #19 AWG AERIAL COMMUNICATIONS CABLE TO BE RETAINED

EXISTING 12 TWP #19 AWG UNDERGROUND COMMUNICATIONS CABLE TO BE RETAINED. COMMUNICATIONS TO EXISTING FOREST AVENUE MULTISONICS OSAM SYSTEM SHALL BE RETAINED.

CONNECT 1 PAIR OF EXISTING 12 TWP #19 AWG COMMUNICATIONS CABLE TO PROPOSED ACTELIS ML 688 DSL MODEMS. MODIFY T-TAPS AS NEEDED TO ESTABLISH STABLE ETHERNET OVER COPPER COMMUNICATIONS BETWEEN FIELD SIGNAL CONTROLLERS AND STREETWISE ATMS SERVER LOCATED AT PORTLAND TRAFFIC ENGINNEERING

INSTALL WIRELESS INTERCONNECT SYSTEM TO EXISTING COPPER COMMUNICATIONS NETWORK (BID ALTERNATE NO. 1)

PORTLAND TRAFFIC OPERATIONS FACILITIES MANAGEMENT BUILDING 65 HANOVER STREET F&I NEW DSL MODEM UPGRADE EXISTING STREETWISE LIGHT SYSTEM TO STREETWISE ATMS UNDER THE EXISTING PACTS AGREEMENT

INSTALL GPS UNIT

EXISTING 12 TWP #19 AWG AERIAL COMMUNICATIONS CABLE TO BE RETAINED

EXISTING 12 TWP #19 AWG UNDERGROUND COMMUNICATION CABLE TO BE RETAINED. CARE SHALL BE TAKEN WHEN IDENTIFYING THE SPARE PAIR OF CABLE TO BE USED IN THE PROPOSED BRIGHTON AVENUE STREETWISE SYSTEM TO NOT DISABLE COMMUNICATIONS TO THE EXISTING MULTISONICS OSAM SYSTEMS

LARABEE ROAD
RIVERSIDE STREET
TAFT AVENUE
CABOT STREET
WARWICK STREET
KENT STREET
RAND ROAD
ROWE AVENUE
CAPISIC STREET
BRIGHTON AVE
COLONIAL ROAD
STEVENS AVENUE
COLUMBIA ROAD
FOREST AVE
WOODFORD STREET
DARTMOUTH ST
DEERING AVE
FALMOUTH ST
PREBLE ST
HANOVER ST
PORTLAND ST
JOHN STREET
CONGRESS STREET

95 295

29 28 27 26 25 24 23 22 21 20 19

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.81	QUANTITY
ACTELIS ML684 DSL MODEM	1
STREETWISE ATMS UPGRADE	1
STREETWISE ATMS TRAINING	24 HOURS

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

LAYOUT SCALE

700 0 700 1400

Scale in Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

		BY	DATE
PROJ. MANAGER	S. LANDRY	J. ROBERT	5/6/10
DESIGN-DETAILED	M. GRAHAM	M. SIGNEW	7/19/10
CHECKED-REVIEWED	C. BOBAY		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE

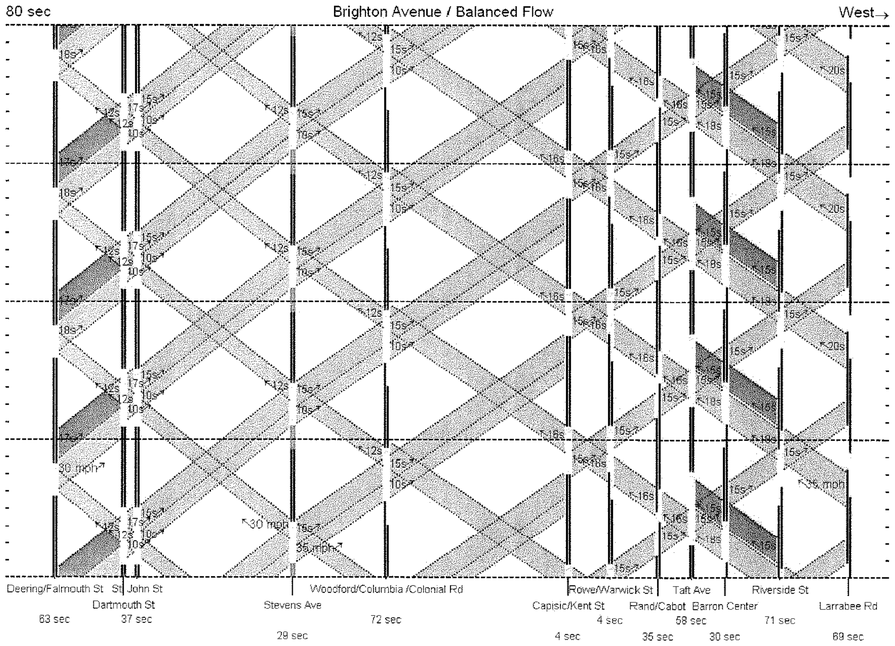
COMMUNICATIONS NETWORK DIAGRAM

SHEET NUMBER

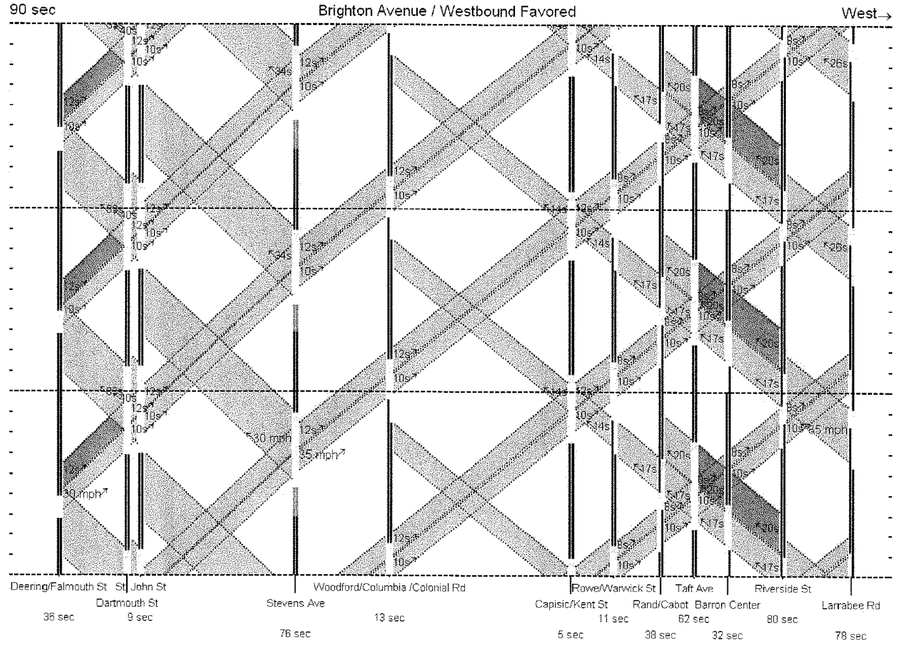
15

OF 19

PLAN 1
80 SECOND BACKGROUND CYCLE



PLAN 2
90 SECOND BACKGROUND CYCLE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN 17730.00

	BY	DATE	SIGNATURE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	J. ROBERT	5/6/10	
CHECKED-REVIEWED	M. GRAHAM	7/19/10	
DESIGN2-DETAILED2	M. SIENNEN		
DESIGN3-DETAILED3	C. BOBAY		
REVISIONS 1			P.E. NUMBER
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			DATE
FIELD CHANGES			

BRIGHTON AVENUE

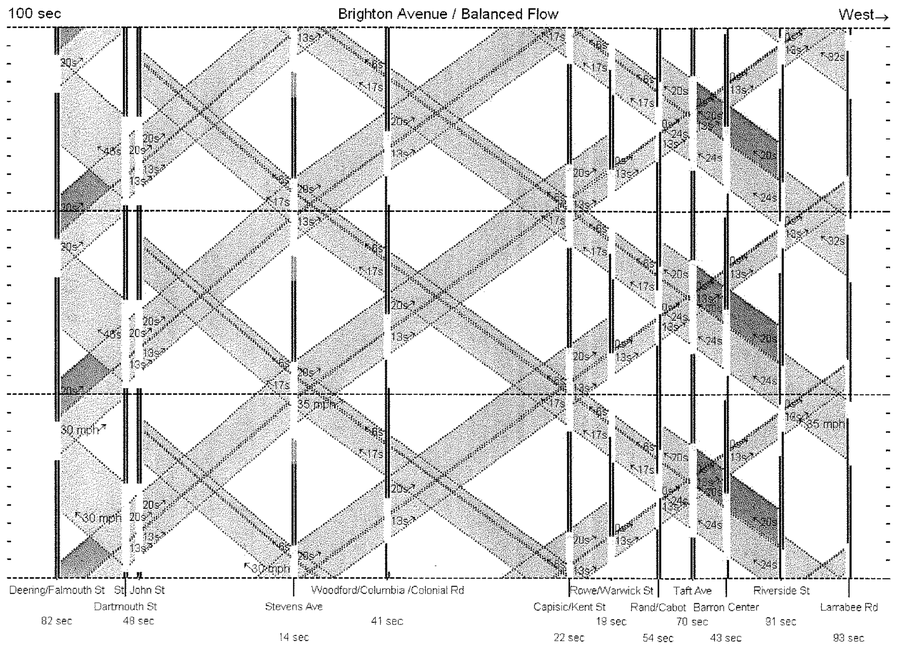
TIME SPACE DIAGRAMS

SHEET NUMBER

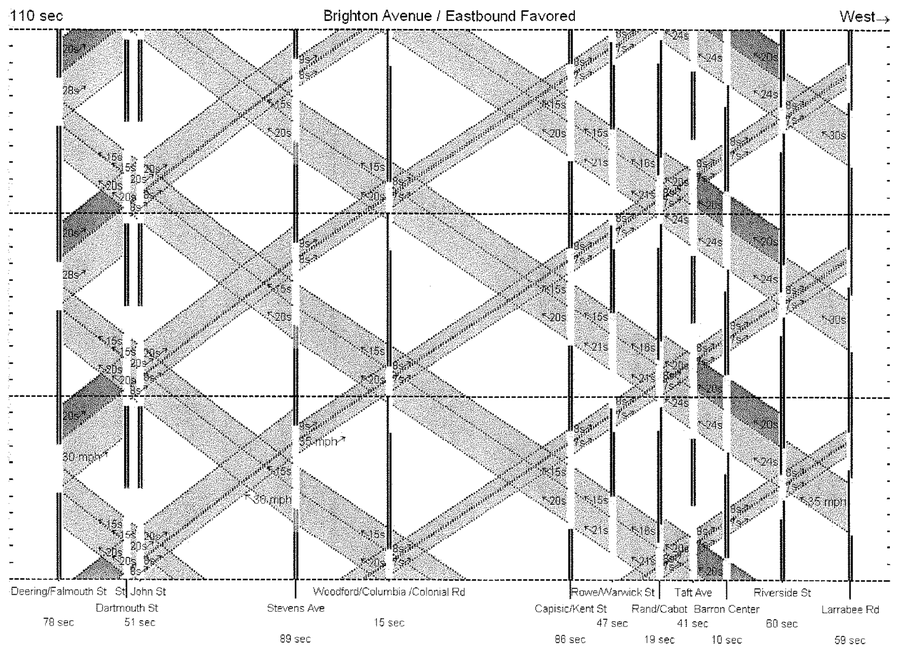
16

OF 19

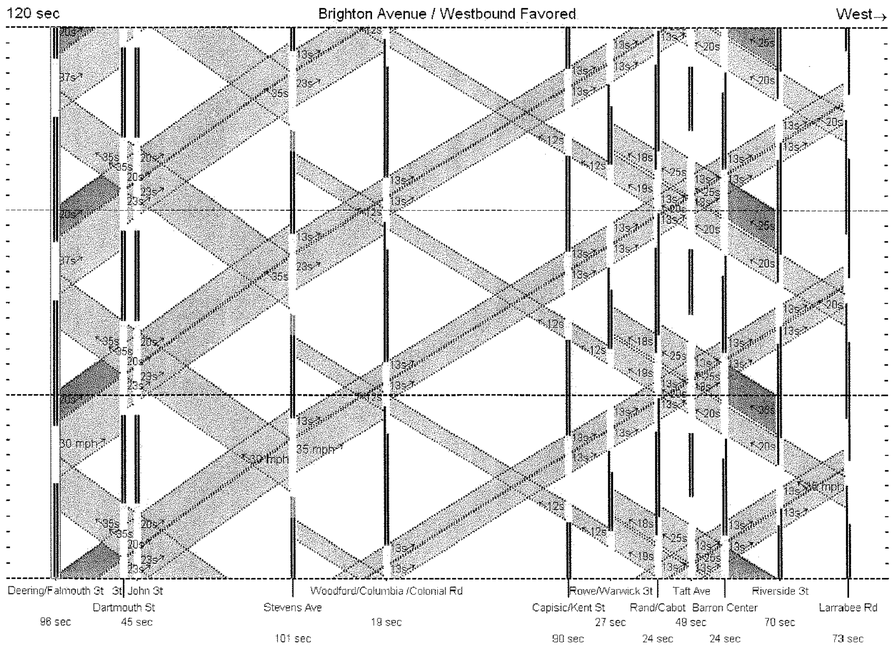
PLAN 3
100 SECOND BACKGROUND CYCLE



PLAN 4
110 SECOND BACKGROUND CYCLE



PLAN 5
120 SECOND BACKGROUND CYCLE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN 17730.00

		BY	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN DETAILED	M. GRAHAM	J. ROBERT	5/6/10
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	7/19/10
DESIGN2 DETAILED2			
DESIGN3 DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE

TIME SPACE DIAGRAMS

SHEET NUMBER

17

OF 19

Username: J ROBERT Date:11/16/2010

Filename: ...\ts\planset\017_52085007SD2.dgn Division:

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE 6TI LED OR APPROVED EQUAL	14
APS ADVISOR ACCESSIBLE PEDESTRIAN SIGNAL (PUSHBUTTON) WITH INFORMATIONAL SIGN	8
FURNISH AND INSTALL GPS UNIT WIRED TO TRAFFIC CONTROLLER TO UPDATE TIME CLOCK ON A DAILY BASIS	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

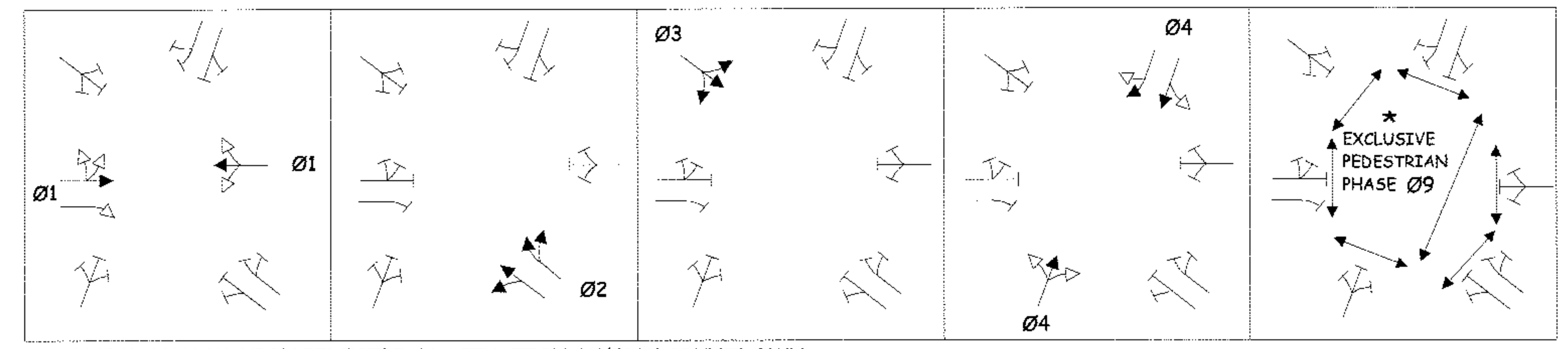
THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY

BID ALTERNATE NO. 1

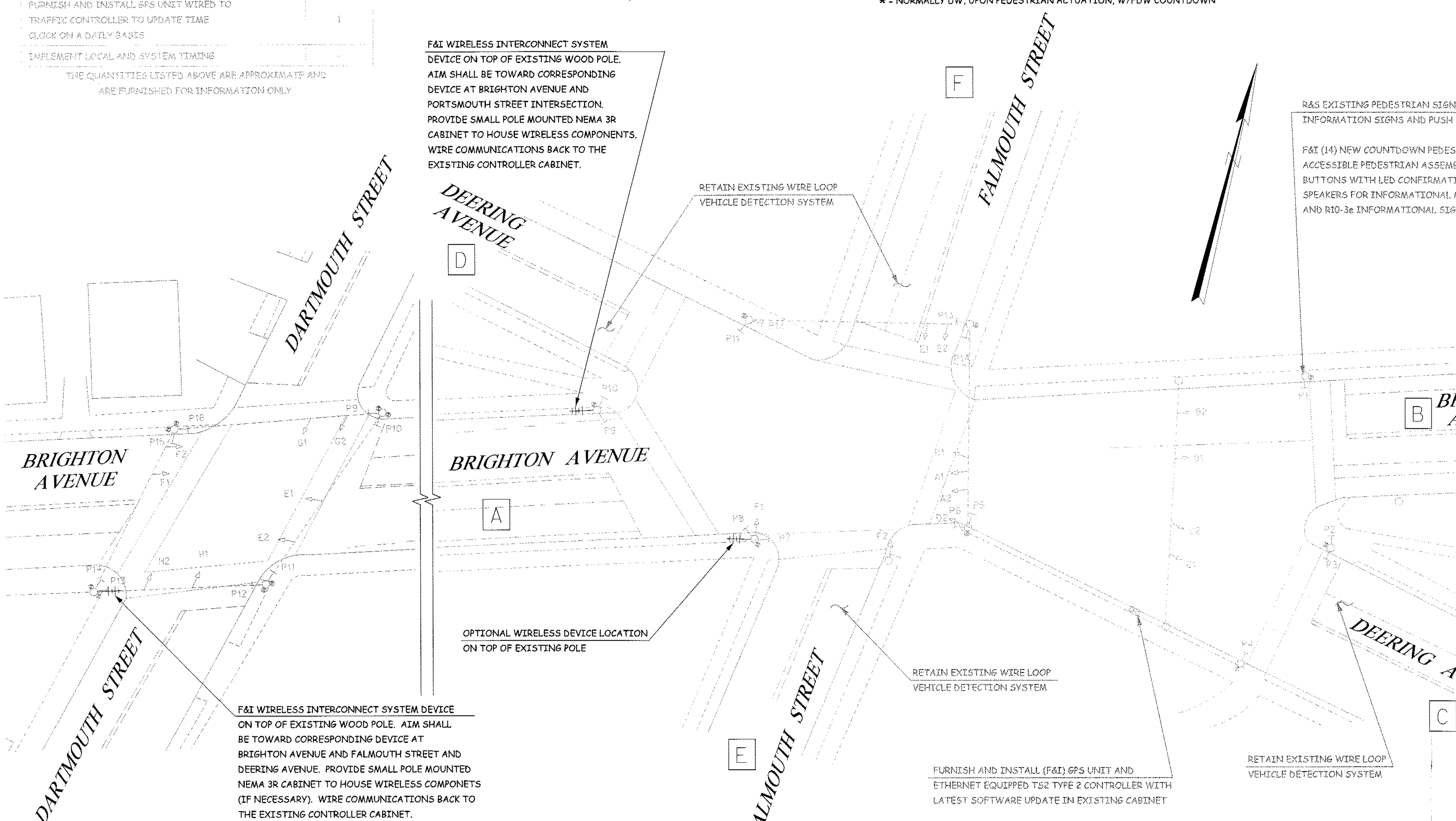
EQUIPMENT AND WORK ITEMS	QUANTITY
ACTELIS ML684 DSL MODEM (INCIDENTAL TO ITEM 643.90)	1
ENCOM COMMPAK BROADBAND 5.6GHz WIRELESS ETHERNET SYSTEM OR APPROVED EQUAL (ITEM 643.90)	1

SCREENED ITEMS ARE TO BE INCLUDED IN THE BASE BID, SEE SHEET 5

EXISTING PHASING SEQUENCE (RETAINED)



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN



SIGNAL HEAD DATA

EXISTING	PROPOSED
A1,A2,B1,B2,C1,C2 D1,D2,E1,E2,F1,F2	P1 - P14
R Y G	
12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	7	7	7	7					
PASSAGE TIME	3	3	3	2					
MAXIMUM 1	45	35	18	20					
MAXIMUM 2	70	30	20	20					
YELLOW	3	3	3	3					3
ALL RED	4	4	4	3					1
PEDESTRIAN WALK									10
PEDESTRIAN CLEARANCE									14
RECALL	S	O	O	O					O
DETECTOR OPERATION		PR	PR	PR					
PREEMPTION PRIORITY									
FLASH	R	R	R	R					D
DUAL ENTRY	OFF	OFF	OFF	OFF					OFF

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	80	90	100	110	120
OFFSET (END Ø1 GRN)	63	36	82	78	97
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	23	15	21	26	33
SPLIT TIME Ø2	22	17	20	21	21
SPLIT TIME Ø3	17	15	15	20	20
SPLIT TIME Ø4	17	14	15	14	17
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	45	32	41	47	54
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	34	29	30	34	37
SPLIT TIME Ø9	1	29	29	29	29

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø1 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 6 AND PHASE 8 ARE DUMMY PHASES TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE LOOP TO GROUND	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL						
DEERING AVE	NORTHWESTBOUND	ALL DEPARTURE	2										
DEERING AVE	SOUTHEASTBOUND	ALL DEPARTURE	3										
FALMOUTH ST	NORTHBOUND	ALL DEPARTURE	4										
FALMOUTH ST	SOUTHBOUND	ALL DEPARTURE	4										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:

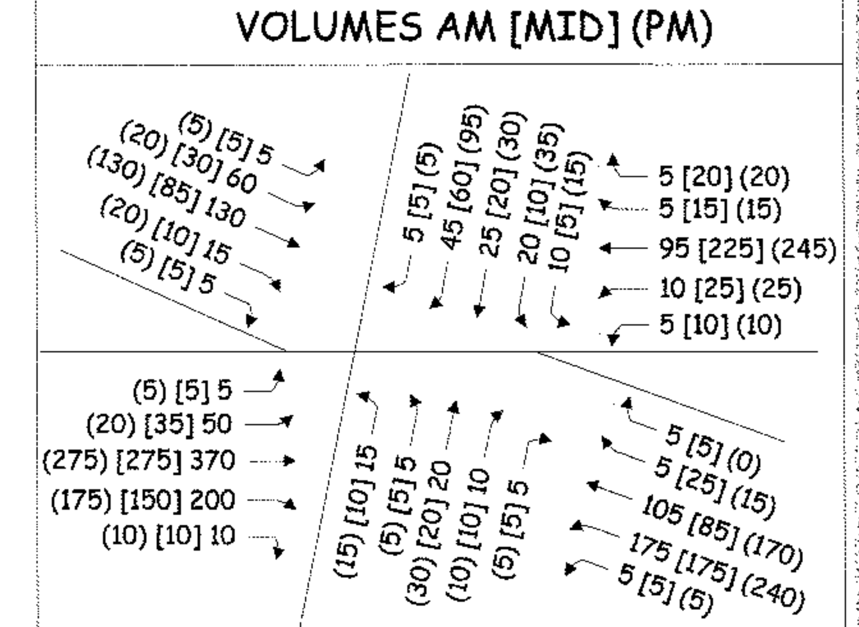
1. CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.
2. THERE IS NO EXISTING VEHICLE DETECTION ALONG BRIGHTON AVENUE.

INTERSECTION:
DEERING AVE / FALMOUTH ST

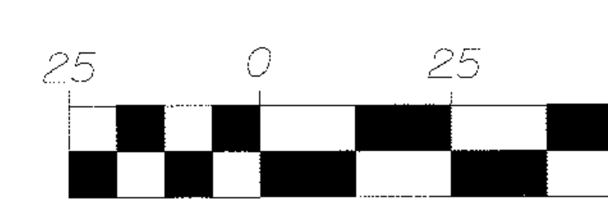
SIGNAL GROUP:
1

LOCATION / PROPOSED DROP:
19

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN



SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PORTLAND
PIN 17730.00

		BY	DATE
PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	5/6/10
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	7/19/10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

BRIGHTON AVENUE
DEERING AVENUE / FALMOUTH STREET
BID ALTERNATE NO. 1

SHEET NUMBER
18
OF 19

Filename: ...\018_520850OSG01-ALT1.dgn Division: Username: J ROBERT Date:11/16/2010

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
NAZTEC TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	4
ADA COMPLIANT PEDESTRIAN 2-INCH POLCO MUSHROOM TYPE PUSHBUTTON WITH R10-3e SIGN	4
FURNISH AND INSTALL GPS UNIT WIRED TO TRAFFIC CONTROLLER TO UPDATE TIME CLOCK ON A DAILY BASIS	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	7	5	5	10			
PASSAGE TIME	1.5	2.5	2.5	1.5	2.5	2.5			
MAXIMUM 1	12	45	30	15	15	45			
MAXIMUM 2	15	60	30	15	15	60			
YELLOW	3.5	3.5	3.5	3.5	3.5	3.5			
ALL RED	2.5	2.5	2.5	2.5	2.5	2.5			
PEDESTRIAN WALK		5		5		5			
PEDESTRIAN CLEARANCE		16		16		15			
RECALL	O	S	O	O	O	S			
DETECTOR OPERATION	PR	PR	PR	PR	PR	PR			
PREEMPTION PRIORITY									
FLASH	R	Y	R	R	R	Y			
DUAL ENTRY	OFF	OFF	OFF	OFF	OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

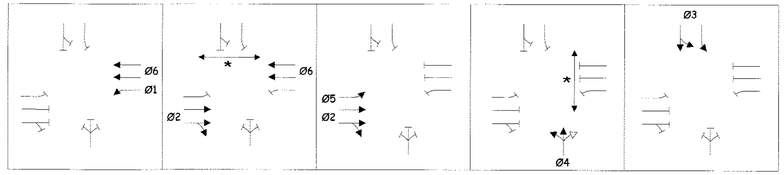
ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	90	100	110	120
OFFSET (END Ø6 GRN)	71	80	91	60	70
YIELD POINT	0	0	0	0	0
SPLIT TIME Ø1	13	13	13	13	16
SPLIT TIME Ø2	27	28	36	38	45
SPLIT TIME Ø3	13	21	21	31	31
SPLIT TIME Ø4	27	28	28	28	28
SPLIT TIME Ø5	14	18	21	21	18
SPLIT TIME Ø6	26	23	30	30	43
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	40	49	49	59	59

COORDINATION MODE SET TO FIXED FORCE-OFF

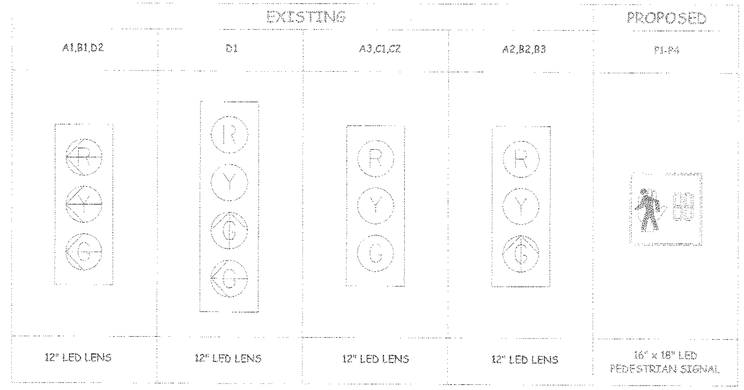
COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø6 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 6 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

PROPOSED** PHASING SEQUENCE



* NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
** EXISTING SIGNAL PHASING SHALL BE MODIFIED SO Ø1 LEFT-TURN AND Ø4 LEADS AND Ø5 LEFT-TURN AND Ø3 RIVERSIDE STREET LAGS

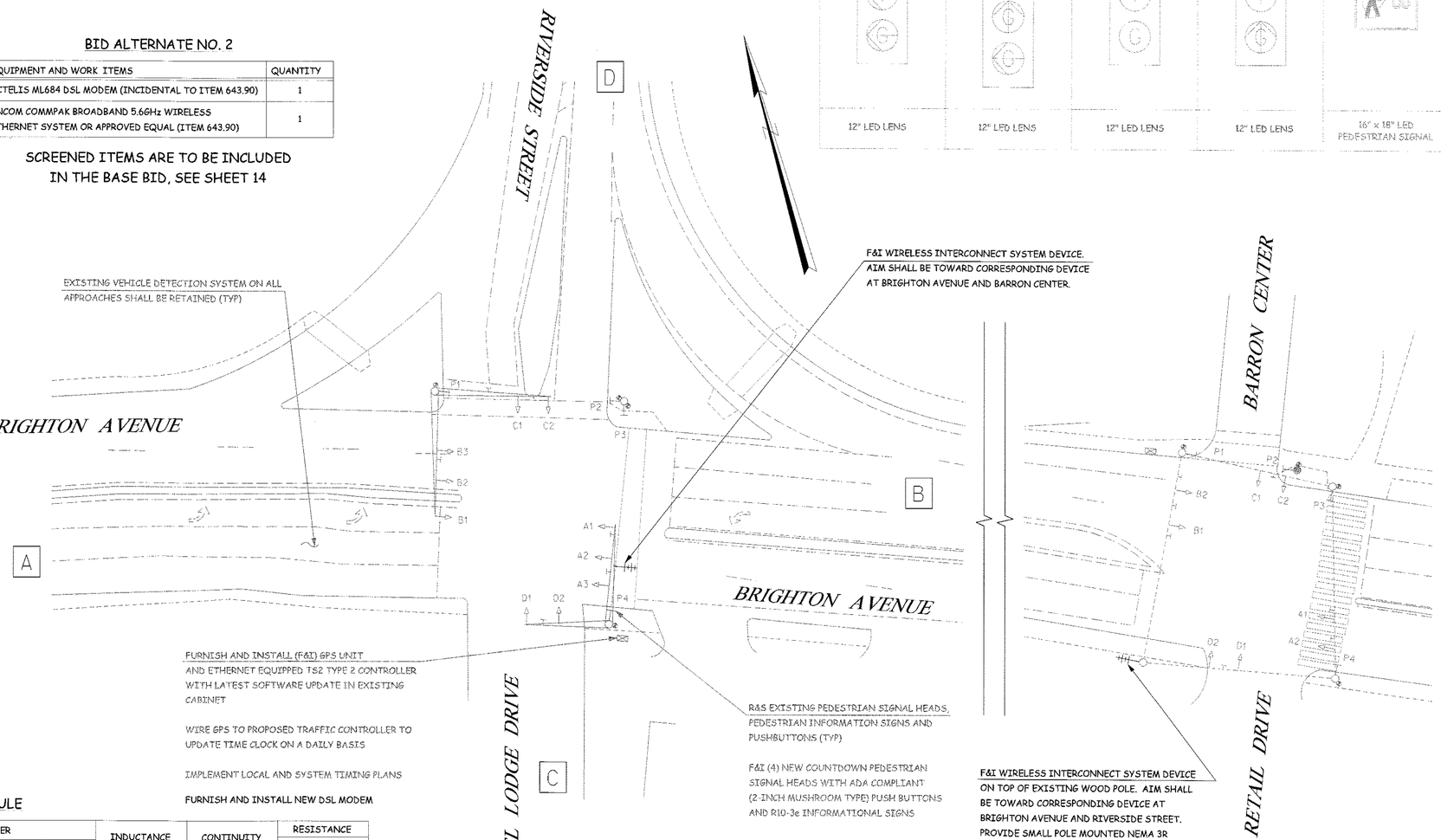
SIGNAL HEAD DATA



BID ALTERNATE NO. 2

EQUIPMENT AND WORK ITEMS	QUANTITY
ACTELIS ML684 DSL MODEM (INCIDENTAL TO ITEM 643.90)	1
ENCOM COMMPAK BROADBAND 5.6GHz WIRELESS ETHERNET SYSTEM OR APPROVED EQUAL (ITEM 643.90)	1

SCREENED ITEMS ARE TO BE INCLUDED IN THE BASE BID, SEE SHEET 14



EXISTING VEHICLE DETECTION SYSTEM ON ALL APPROACHES SHALL BE RETAINED (TYP)

F&I WIRELESS INTERCONNECT SYSTEM DEVICE. AIM SHALL BE TOWARD CORRESPONDING DEVICE AT BRIGHTON AVENUE AND BARRON CENTER.

FURNISH AND INSTALL (F&I) GPS UNIT AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING CABINET

WIRE GPS TO PROPOSED TRAFFIC CONTROLLER TO UPDATE TIME CLOCK ON A DAILY BASIS

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS

FURNISH AND INSTALL NEW DSL MODEM

R&S EXISTING PEDESTRIAN SIGNAL HEADS, PEDESTRIAN INFORMATION SIGNS AND PUSHBUTTONS (TYP)

F&I (4) NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS WITH ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS AND R10-3e INFORMATIONAL SIGNS

F&I WIRELESS INTERCONNECT SYSTEM DEVICE ON TOP OF EXISTING WOOD POLE. AIM SHALL BE TOWARD CORRESPONDING DEVICE AT BRIGHTON AVENUE AND RIVERSIDE STREET. PROVIDE SMALL POLE MOUNTED NEMA 3R CABINET TO HOUSE WIRELESS COMPONETS (IF NECESSARY). WIRE COMMUNICATIONS BACK TO THE EXISTING CONTROLLER CABINET.

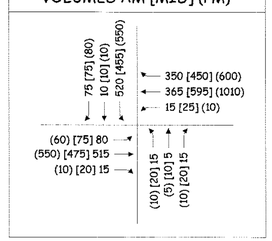
DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL					LOOP TO GROUND	
BRIGHTON AVE	WESTBOUND	LEFT	1										
BRIGHTON AVE	EASTBOUND	THRU/THRU-RIGHT	2										
RIVERSIDE ST	SOUTHBOUND	LEFT/LEFT-THRU	3										
DRIVEWAY	NORTHBOUND	ALL DEPARTURE	4										
BRIGHTON AVE	EASTBOUND	LEFT	5										
BRIGHTON AVE	WESTBOUND	THROUGHS	6										
								RECORD FIELD MEASUREMENTS HERE					

DETECTOR NOTES:
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

INTERSECTION:
RIVERSIDE STREET
SIGNAL GROUP:
1
LOCATION / PROPOSED DROP:
29

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND

PIN
17730.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	M. GRAHAM	5/6/10
CHECKED-REVIEWED	C. BUDAY	7/19/10
DESIGN2-DETAILED		
DESIGN3-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

BRIGHTON AVENUE
RIVERSIDE STREET

BID ALTERNATE NO. 2

SHEET NUMBER
19
OF 19

Filename: ...\019_5208500S610-ALT2.dgn Division: Username: J.ROBERT Date:11/16/2010